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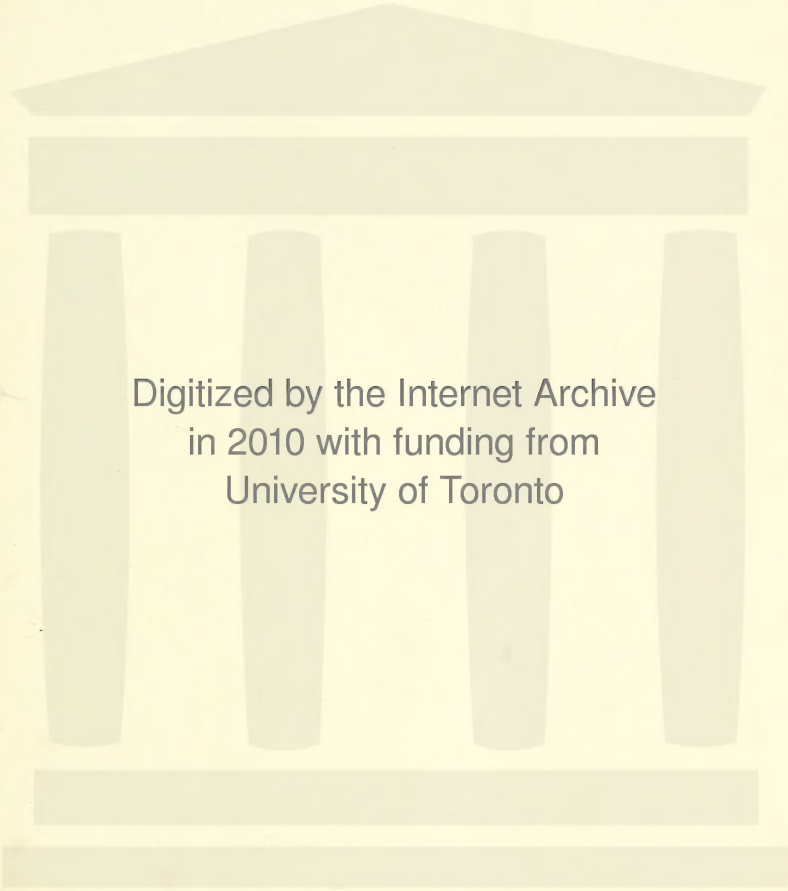
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THE

Montreal Medical Journal

A MONTHLY RECORD OF THE

PROGRESS OF MEDICAL AND SURGICAL SCIENCE.

EDITED BY

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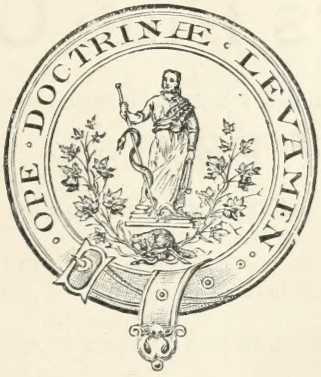

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MONTREAL.

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THE
MONTREAL MEDICAL JOURNAL.

VOL. XXVII. JANUARY, 1898. No. 1.

Original Communications.

NOTES ON SOME RECENT GALL-STONE CASES.[1]

BY

JAMES BELL, M.D.,

Surgeon to the Royal Victoria Hospital; Consulting Surgeon to the Montreal General Hospital; Professor of Clinical Surgery in McGill University, &c.

MR. PRESIDENT AND GENTLEMEN:

It is not my intention to read a paper on the subject of cholelithiasis, nor even on any portion of the subject, but simply to present, in connection with the specimens removed by operation, very condensed reports of the cases upon which I have operated during the past summer and autumn. They are as follows:

CASE I.—Mrs. T., æt. 40, a slight woman, normal weight 100 lbs., married 13 years, the mother of three children, the youngest eight years of age, came under observation on the 11th of May, 1897. Her first attack was nine years ago and is described as a severe aching pain through the right side and more or less through the whole upper zone of the abdomen, lasting about half a day, accompanied by vomiting and followed by a tumour the size of a man's fist, just inside the right anterior superior iliac spine. This was tender and painful and she was confined to her bed for seven weeks. During this time the tumour was painful on movement of the body. She was then quite well for three years, except that she felt some pain in the side after every unusual exertion. Six years ago she had a second attack, accompanied by nausea and vomiting and lasting about the same length of time; athough she was not confined to her bed for so long a period and had no tumour following the attack. She then remained well until March, 1897, except that on exertion she felt some pain in the right side. She had a series of attacks similar in character about

[1] Read before the Montreal Medico-Chirurgical Society, Dec. 10, 1897.

the first and fifteenth of March and the first of April (1897), and two others during the month of April, while in bed, which she only left to come to Montreal on the 11th of May. On being questioned, she remembered having had indefinite abdominal pains for years prior to the first attack nine years ago. She had always enjoyed good general health and had never suffered from jaundice, dyspepsia or uterine troubles. During her illness her weight had fallen to 89 lbs. On examination of the abdomen a hard and tender mass was felt just external to, and about an inch below the umbilicus on the right side. It could be traced up more or less indefinitely to the costal margin, in the nipple line, and moved slightly with the movements of respiration. On account of the evident inflammatory nature of the attacks and the situation of the tumour a diagnosis of appendicitis had been made. The operation of cholecystostomy was performed on the 17th of May, when four large and 132 small stones were removed. The four large stones stood one upon another in a column extending outwards from the neck of the cystic duct, the deepest one being firmly impacted in the duct and broken in removal which was effected with much difficulty. The small stones were free in the gall-bladder, which contained a small amount of pus, the latter being sterile on cultivation.

This patient made an uninterrupted recovery, and was discharged on the 5th of July, with the wound not quite closed. Within the last three months I have heard from her that her health is excellent but that the fistula still persists.

Case II.—Mrs. W., a stout woman, æt. 50, an epileptic, married, and the mother of one child, now grown up. Her first symptoms appeared in April, 1895, as an attack of biliary colic, accompanied by vomiting, chills and fever, for which she spent three weeks in the Homeopathic Hospital. She says she was jaundiced then. Since then she has had a great many similar attacks and was admitted to the Royal Victoria Hospital on the 13th of July, 1897, with slight yellowness of the skin. Cholecystostomy was done on the 24th of July, and 124 stones removed. The patient made an uninterrupted recovery and was discharged on the 14th of August in good health and with the wound soundly healed, although there had been for some time after operation a very great flow of bile externally.

Case III.—Mrs. B., æt. 48, the mother of six children, had suffered from a dull pain about the right hypochondrium for 22 years. In December, 1895, she began to have attacks of sharp pain about every three weeks, and about Christmas of that year a dull pain extending into the right shoulder region. In March, 1896, she had the first attack of severe biliary colic, accompanied by chills, perspiration and

vomiting. These attacks continued, sometimes recurring as often as every three weeks, and an attack in January, 1897, was followed by jaundice. In the intervals between the severe attacks she suffered from the dull pain above described. When admitted to the hospital on the 24th of July, 1897, she was a well nourished woman with a systolic murmur at the apex of the heart, but otherwise healthy. A smallish smooth round tumour could be felt in the region of the gall-bladder and on palpation the crepitus of the stones moving upon one another could be distinctly felt. She was operated upon on the 29th of July. The gall-bladder was moderately distended, containing a small quantity of normal bile. Sixty-six facetted stones were removed; 62 of them were free in the gall-bladder and were removed without difficulty. Another was removed with great difficulty from the neck of the duct, and a group of three were impacted in the cystic duct so firmly that an incision was made through its walls, through which they were removed. This incision was closed by fine silk sutures. There was no flow of bile during the operation, after the gall-bladder had been emptied. The gall-bladder was fixed in the wound in the usual way, and after a few days bile began to flow through the tube, though never in great quantity. The patient made an uneventful recovery and was discharged on the 8th of September, with a very slight serous discharge from the site of the wound.

I have since heard that the sinus persists, although her health is good and she is free from pain.

Case IV.—Mrs. C., æt. 47, a large woman with flabby pendulous abdomen, the mother of 11 children, the last born six years ago, was admitted to the Royal Victoria Hospital, in a deeply jaundiced condition, on the 13th of August, 1897, with the following history: She had her first attack of pain in the right hypochondrium in 1881. This was not accompanied by vomiting or chill, but was followed by jaundice. Similar attacks occurred about once in two years up to 1894, when she had a much more severe attack, in which she suffered for 12 days. In the next two years she had one attack each year. Each of these attacks was also followed by jaundice. Since May 1897, she has had many attacks, and the jaundice has never entirely disappeared. The stools have been colourless and the urine dark all the time. The last attack began on the 26th of July, and lasted for three days. Since then the jaundice has been extreme, and has increased rather than diminished. The abdomen was opened on the 17th of August. The gall-bladder was found empty and shrunken. The liver was enlarged and firm, and the lower border thick and rounded. There were many firm old adhesions between the lower

surface of the liver and the adjacent viscera. On exposing the ducts a stone was felt in the common duct, about half an inch from the duodenum. It appeared to be about the size of a large marble and was firmly fixed in the duct, and could not be moved along it in either direction. A longitudinal incision was made in the duct and the stone removed. It was not a hard stone and was broken in removal. As it was turned out of the duct a gush of bile followed. This was sponged out and the incision closed by sutures. A drainage tube was passed down to the border of the duct and iodoform gauze packed around it. The patient made an excellent recovery. The jaundice gradually disappeared, and the stools and urine regained their normal colour in a few days. She was discharged on the 1st of October quite well.

This was a solitary stone which had evidently been in the common duct for a very long time.

Case V.—Mrs. H., æt. 23, married, the mother of two children, the youngest 14 months old, had her first attack of biliary colic on the 1st of April, 1897 From that time to the 1st of June, she had five similar attacks, very severe pain in the right hypochondrium, lasting about four or five hours, accompanied by vomiting and followed by perspiration. The sixth attack on the 1st of June lasted more or less for nine days, and was followed by slight jaundice. Then she had an attack every 24 hours for ten days with more intense juandice, colourless stools and high coloured urine. From that time until her admission to hospital she had attacks every three or four days, lasting about three hours each, and with persistence of the juandice. Her physician was able at this time to palpate a tumour in the region of the gall-bladder. On the evening of the 18th of August, she left home to come to Montreal, a distance of some 60 miles, by train. She suffered intensely during the trip and all through the night, but was relieved in the morning. She was operated upon on the 25th, one week later. During this week she had no attacks, the tenderness diminished greatly and the jaundice lessened perceptibly. The first two stools were colourless, the next two slightly coloured, and the last two (in this week) almost normal in colour. Careful examination of the stools, however, failed to discover any gall-stones. It was therefore a question whether this woman should be submitted to operation or not. Operation was decided upon and the abdomen was opened on the 25th of August (as already stated). The gall-bladder was found large and flabby and the bile ducts dilated to the size of a large lead pencil. The head of the pancreas was hard and thickened (apparently inflammatory thickening), but there were no stones in any

of the bile passages. The stone, or stones, had evidently been passed in the last attack, although they were not found in the stools. The patient made an uneventful recovery and was discharged on the 23rd of September.

Case VI.—Mrs. P., æt 30, a medium sized, well nourished woman, the mother of five children, ranging in age from 12 years to 11 months, was admitted to the Royal Victoria Hospital, on the 13th of September, 1897, with the following history : On the 27th and 28th of August she had had an attack, each day, of biliary colic. Tenderness persisted and a mass was palpable in the right side of the abdomen, below the costal margin. She had suffered from more or less constant uneasiness in this region for six years, and during her labors she had suffered more in this region than in the uterus.

Cholecystostomy was done on the 13th of September. The gall-bladder contained about an ounce of colourless viscid fluid, sterile on cultivation and seven facetted stones. The operation was simple and recovery uneventful. She was discharged with the wound completely healed on the 14th of October, 1897.

Case VII.—Miss C., æt. 35, unmarried, and previously healthy, while suffering from typhoid fever, (about the end of the second week), was seized with pain, vomiting and a fall of temperature, (to 94.5°F),—a condition of collapse suggesting perforation,—early in the morning of the 21st of September, 1897. She rallied in a few hours, and a painful, tender and rigid condition developed just below the right costal margin. The abdomen was opened in the linea semilunaris on the 24th of September, at 4.30 p.m. There was no general peritonitis, but the gall-bladder was distended and covered with patches of lymph, which extended over the lower border of the liver and to the adjacent coils of colon and duodenum. There was no perforation. The gall-bladder was aspirated and 6 oz. of pus, which gave pure cultures of the typhoid bacillus, withdrawn. It was then incised and 152 facetted stones removed, and the operation of cholecystostomy completed in the usual way. The wall of the gall-bladder was very dark, œdematous and friable. A drainage tube was inserted and bile flowed freely. On account of the pre-existing localized peritonitis an opening was left on the lower angle of the abdominal wound, through which a drainage tube and iodoform gauze packing were carried up along the under surface of the liver between the bile passages and the intestines. The patient's condition was excellent until the morning of the 26th, when symptoms of perforative peritonitis began about 7 p.m., and she sank and died at 4 a.m. next morning, the 27th of September. The wound was dressed at 4.30 p.m. on the 26th and the

tube removed. The intraperitoneal drain and packing were also removed and the packing renewed at the same time, when everything looked quite well and promising. Bile continued to flow from the opening in the gall-bladder to the end, and there was no evidence that it had given way. A partial post-mortem examination was made through the operation wound, 11 hours after death. A general purulent peritonitis was found and four small facetted stones were removed from a pocket at the lower angle of the wound. The walls of the gall-bladder were injected and its mucosa much thickened and of a deep green colour. The surrounding liver tissue was pale and leathery, with multiple focal miliary necrosis. The small intestine was removed and showed the typical anatomical lesions of typhoid fever. A rupture through a typhoid ulcer was found, (but may have been made in the removal of the intestine), about eighteen inches above the ileocæcal valve. In the absence of a complete post-mortem examination of the abdomen, my interpretation of the sudden, fatal termination in this case is, that ulceration of the deeper part of the gall-bladder or the cystic duct had taken place into, or upon the adjacent under-surface of the liver, and that it was the bursting and emptying of this abscess cavity which set up the fatal peritonitis. In no other way can I account for the presence of four gall-stones in the peritoneal cavity, as I am sure they did not escape into the abdomen at the time of operation and the steady flow of bile externally for hours after the fatal symptoms set in, showed that there could not be any direct communication with the abdominal cavity. Moreover, the wound was examined and the gall-bladder sutures were found intact five hours after the onset of the symptoms.

Case VIII.—Mrs. P. H. A., æt 25, a medium-sized, well nourished woman, the mother of three children, was admitted to the Royal Victoria Hospital on the 10th of October, and operated upon the next day In August, 1893, two weeks after confinement, she had her first attack of biliary colic, preceded by a chilly feeling and followed by vomiting. She then had attacks every two weeks, until the end of September, 1893, when she had a very severe attack, which was followed by jaundice for 24 hours. She remained well until the 15th of August, 1897, when she contracted measles and the attacks returned ; and the gall-bladder became tender and palpable. The last attack of biliary colic was on the 6th of September, 1897.

At the operation, the gall-bladder was tense and distended, and contained several ounces of thick creamy pus, and a single stone. Cultures from the pus showed the colon bacillus only. Her progress after operation was most satisfactory, and she left the hospital in nine days,—October 28th,—to be taken charge of by her own physician.

The wound is completely healed and her general health is first-rate.

An interesting question in this case is whether or not the cholecystitis was caused by the attack of measles.

Case IX.—Mrs. C., a large, fleshy woman, æt 61, the mother of 14 children, intensely jaundiced, and suffering from two large carbuncles on the right side of the abdomen and on the right loin, was admitted to the Royal Victoria Hospital on the 13th of October, 1897. Her history was as follows: She had always enjoyed the best of health until March, 1894, when she slipped and fell, striking her right side against a barn door. The immediate effects of this injury passed off in a few days, but a month later she had a severe attack of spasmodic pain about the right costal margin, unaccompanied by chill or vomiting. She had similar attacks about twice a year for the next three years, each being accompanied and followed by tenderness, just below the right costal border. On the 10th of August, 1897, a very severe attack came on and persisted, with short intervals of relief, until she came to hospital. It was accompanied by chills, a sense of fulness at the stomach and persistent vomiting. Three weeks after its onset jaundice appeared and grew steadily more and more intense. The stools were colorless and putty-like, and the urine very dark. The carbuncles were treated on the 14th of October, and the abdomen was opened on the 4th of November. A facetted stone was found freely movable in the common duct, and removed through a longitudinal incision, which was closed by suture. The gall-bladder was shrunken and contracted and contained 6 facetted stones, which were removed through an incision in its walls. There was no evidence of communication between the common duct and the gall-bladder, and the wound in the latter could not be brought up to the parietal peritoneum. The liver border was round and firm. A drainage tube was carried down to the wound in the duct, along the under-surface of the liver, and the space packed off by strips of iodoform gauze. The patient made an uninterrupted recovery, and, although still in hospital, she is practically well and ready for discharge. The bile-staining disappeared gradually from the skin and urine, and within a week the stools were of normal color.

An interesting feature in this case is the fact that the group of 7 stones which had hitherto given rise to no symptoms whatever, seems to have been disturbed by the traumatism in March, 1894, and that this disturbance was the starting point in a series of changes which culminated in the conditions above described.

Case X.—Mrs. C. C., a pale woman, somewhat deaf, æt. 27, the mother of one child, had an attack of biliary colic about a year ago,

accompanied by chills and vomiting. She recovered from this and remained well until November 8th, 1897, when she had another attack. She had a third attack on the 13th of November, and was sent into the Royal Victoria Hospital. She also had similar attacks on the 20th and 23rd of November, and was operated upon (cholecystostomy) on December 2nd, 1897. Seven facetted stones were removed from the base of the gall-bladder, the sac also containing some bile. This sac was found to be completely closed off from the remainder of the gall-bladder, which also contained 6 facetted stones. An incision was made lower down in the gall-bladder, through which these stones were removed, and the incision was closed by suture. A communication was then made through the occlusion, and a drainage tube inserted down to the cystic duct.

This patient's progress since operation has been quite satisfactory.

It will be noted that all these patients were women, who were, with one exception, the mothers of families, and that their ages varied from 23 to 61 years. There were two cases of solitary stone ; the others were all multiple.

The operations were : Simple cholecystostomy, 5 ; cholecystostomy with incision (and suture) of the cystic duct for the removal of a group of impacted stones, 1 ; incision (and suture) of the common duct for the removal of a solitary impacted stone, 1 ; incision (and suture) of the common duct for the extraction of a movable facetted stone, and incision of the shrunken gall-bladder in the same patient for the removal of six other similar stones, 1 ; and in the tenth case the discovery that the stone (or stones) had already passed through the ducts.

Results.—With the exception of the typhoid patient, all recovered, and in no case was there at any time a symptom to cause anxiety. One patient had, at the end of three months, a biliary fistula, another had a sinus persisting, six are completely healed and one was operated upon only eight days ago.

Case VII. is another case in evidence of the frequency of cholecystitis as a sequel to or complication of typhoid fever, and emphasizes the fact that bile, so far from being destructive to the typhoid bacillus, is, actually, an excellent medium for its growth and reproduction. In all the cases the operation was completed at a single sitting.

TYPHOID FEVER WITHOUT INTESTINAL LESIONS—WITH THE REPORT OF A CASE.

BY

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Formerly typhoid fever could not be diagnosed with certainty in the absence of any of the classical symptoms or the characteristic intestinal lesions. With the increase of bacteriological knowledge, however, and the improvement in technique, we are now enabled to include under the category of typhoid many atypical cases about which we must otherwise have remained in doubt. To this result the discovery of the serum reaction has contributed not a little, and we are now enabled to form a more accurate conception of typhoid processes and to recognise the very various aspects which the disease may assume. The occurrence of typhoid fever with absence of the usual ulcerative lesions of the intestines is now recognised by several observers, notably Chantemesse, Vincent, Vaillard, Sanarelli, Roux and others. A number of such cases are on record, but some are not corroborated by bacteriological investigation, so that they are of no scientific value.

A careful search of the literature for the past 10 years has revealed the existence of only 9 such cases which have been confirmed by the discovery of the bacillus of Eberth.

The time has gone by when we could regard typhoid as an infective process localised to the intestines, producing the general symptoms by the secondary action of its toxin. Rather, have recent researches proved that the disease is an infective one, invading the organism through the lymphatics of the intestine and infecting the system as a whole, the intensity of the lesions being generally but not invariably directly proportional to their proximity to the point of inoculation; the brunt of the disease, hence, may fall upon lymphoid tissue, parenchymatous organs, or at times the central nervous system. From this point

of view, which is abundantly supported by clinical evidence, the intestinal tract merely represents a point of departure for the typhoid germ and not the sole place of localisation for its development. Sanarelli is of the opinion that the lesions of the intestine are due to an elective action, not of the bacilli themselves, but their toxins acting from a distance, but this hardly coincides with what we know of the presence of the germs in abundance in the intestinal mucosa. In any case the intestinal lesions should not be regarded as all important, but rather as incidents in the course of a general process. Thus it becomes conceivable that these lesions may at times be wanting. And this is the fact. The prodromal symptoms of the disease, the headache, malaise, anorexia and fever, are to be referred to the nervous system, and the lesions of the intestines may be atypical, delayed, or even absent. Our knowledge, then, of the symptomatology of the disease goes to prove that typhoid is not primarily or necessarily a disease of the intestines any more than variola is merely a disease of the skin. And in support of this view we have the analogous intestinal lesions which are sometimes present in the course of variola, measles, scarlatina, erysipelas and pyæmia. Besides this there is the well known fact that the intestinal lesions bear no relation to the severity of the systemic infection, nor do the objective symptoms referable to the intestine—meteorismus, diarrhœa and the like—bear any relation to the local pathological condition.

Consequently it would be more definite and more accurate to include the typical text-book disease under the term "Enteric Fever," employing the term "Typhoid" in a wider sense to include all pathological processes and conditions resulting from the action of the bacillus typhi or its toxins.

For purposes of comparison the following authenticated cases of typhoid with absence of the usual intestinal lesions may be tabulated as follows:

Case.	Observer,	Clinical Type.	Pathological Condition.
1.	Banti.....	Ordinary type.	Intestines normal. Spleen and mesenteric glands swollen. B. Typhi in spleen and mesenteric glands.
2.	Thue	Spleno-typhus.	Slight tumefaction of Peyer's glands. B. Typhi in spleen and kidneys,
3.	Vaillard.....	Meningo-typhus.	Peyer's Patches normal. B. Typhi in lungs, spleen, spinal cord. Streptococci in meninges and spleen.
4.	Karlinski....	Enlarged spleen. Typical symptoms wanting.	No lesions in intestines or mesenteric glands. B. Typhi in spleen. Cultures from other organs and blood, sterile.
5.	Karlinski....	Enlarged spleen. Dark red papules on trunk.	Intestines normal. Two areas of softening on septum of right ventricle. B. Typhi in spleen, liver, kidney and heart.
6.	Vincent	Diarrhœa, purpura, coma.	Peyer's patches normal. Congestion of small intestines. Spleen and mesenteric glands not swollen. Bilateral pulmonary congestion. B. Typhi and streptococci in spleen, liver, kidneys and heart.
7.	Du Cazal,....	Ordinary type.	No lesions of intestines or mesenteric glands. B. Typhi in spleen.
8.	Beatty	Jaundice, hæmaturia, coma.	Peyer's patches normal. Mesenteric glands and spleen enlarged. B. Typhi in spleen.
9.	Cheadle	Meteorismus, rose-spots, diarrhœa. B. typhi in urine.	Peyer's patches normal. Spleen not enlarged. Liver and mesenteric glands enlarged. B. Typhi in spleen. Partial serum reaction.

The case which we have the opportunity of reporting is in minor points somewhat different from any heretofore described. Unfortunately the history is imperfect on account of the very critical condition of the patient on admission.

For permission to report the case we are indebted to Prof. James Stewart.

Case—W. S., æt. 25, labourer, admitted to Dr. Stewart's wards, Royal Victoria Hospital, on July 8th, 1897 complaining of headache, weakness and constipation.

Personal History.—Whooping-cough, scarlatina and mumps in childhood. Used alcohol to excess until three years ago.

Family History—No inherited taint.

On June 28th, patient came to the out-door department, stating that for some indefinite time, (about two months) previously, he had

been suffering from severe headache, loss of appetite, and general weakness. He had been obliged to give up work several times.

On admission he was found to be a powerful young man, very somnolent and mentally dull. Temp. 103.6°, Pulse 104, Respiration 36. Skin warm and moist. The tongue was coated and dry; abdomen distended, tense and tender. Fading rose spots were visible and spleen was palpable. Bowels constipated. The pulse was dicrotic. Apex beat felt in fourth interspace, half an inch beyond nipple. Heart sounds clear.

Respiratory System.—Expansion, greatest on right side. Some impairment of the note in left axilla. A few moist, crepitant and subcrepitant râles heard in right side. The lungs were not examined posteriorly owing to weakness of the patient.

Urine, sp. gr. 1012. No albumen. No sugar.

The blood, as tested by Prof. Wyatt Johnston, gave the typical serum reaction.

From the 8th to the 13th he was semi-comatose and then low muttering delirium set in, with vomiting. At first the bowels were constipated, but after the first week there were involuntary evacuations. The average temperature for the first week was 103° and after that slightly lower. On the day before death it began to rise again and and just before the end reached 106.6°; the pulse 160; respiration 62. Cultures made from the blood the day before death were sterile.

Death ensued on the 21st.

Autopsy.—Eight hours after death (by Drs. J. G. Adami and A. G. Nicholls). Body that of a young adult male with the usual signs of death. Pectorals and recti of fair size and colour. No intra-muscular hæmorrhages or abscesses. Peritoneal cavity dry.

Cranium.—Brain, weight 1250 grains. Slightly hyperæmic.

Thorax. Bilateral adhesive pleurisy. Trachea reddened and containing frothy mucus. Epiglottis and vocal cords somewhat œdematous. Peri-bronchial glands enlarged. *Right lung*—very œdematous. Lower lobe presented condition of broncho-pneumonia.

Left Lung.—Œdematous. Lower lobes; areas of broncho-pneumonia. Mucopurulent bronchitis.

Heart.—Right side contains adherent ante-mortem clot. Valves normal. Muscles of left ventricle pale, cloudy, fatty and friable. Double right coronary. Recent milk spot on right ventricle.

Abdomen.—Spleen. Old perisplenitis. Weight of spleen 375 grms. Numerous infarcts. On section dark red and pulpy.

Intestines.—Mesenteric glands were generally enlarged, congested and succulent, especially about the ileo-cæcal region. Rectum congested and had a distinctly diphtheritic membrane which is most marked in a zone one inch in depth, two inches above anus. The membrane higher up diminished and was present as a dirty greenish layer lying on the rugæ. (Condition probably due to enemata of whisky.) Large intestine somewhat congested and rather slaty with very slight prominence of the solitary follicles. The lowest three Peyer's patches of the ileum were very slightly raised above the general surface but showed no signs of inflammation. Remaining

Peyer's glands normal. There was no evidence of ulceration anywhere in the intestine, nor any evidence of healed typhoidal lesions. The duodenum showed marked inflammation on tops of rugæ resembling the effects of chlorate of potash.

Stomach.—Moderately small. Posterior aspect greatly congested, extending to lower end of œsophagus. Area of congestion has a characteristically velvety appearance. (Patient had been treated with Yeo's mixture.)

Pancreas.—Pale and glassy looking.

Liver.—Weight 1570 grms. Organ pale, flabby, with moderately obtuse edges. Slight fatty appearance. Bile ducts fairly full of bile. Not specially friable, No focal necroses recognizable. Gall-bladder distended and full of thin greenish bile. Common duct free. Old pericholecystitis.

Kidneys.—Supra-renals cavitated.

Left Kidney.—Weight 210 grms. Capsule peels off with ease. Cortex pale. On section cortex pale and much swollen. Consistency relaxed. Malpighian tufts and straight vessels congested. Fatty change. Sub-acute nephritis.

Right Kidney.—Weight 198 grms. Same as left.

Genito-urinary System—Otherwise normal.

Microscopical Examination.

Lung.—Areas of broncho-pneumonia. Section stained by Gram-Weigert method showed a vast agglomeration of the micrococcus lanceolatus about the pneumonic patches. By Löffler's method a few large bacilli were noted but did not resemble typhoid.

Heart.—Cloudy swelling.

Spleen.—Hyperplastic and congested. Infarction. Stained by Löffler's method, clumps of B. Typhi were seen in pulp. Decolorised by Gram.

Liver.—Severe parenchymatous degeneration amounting in parts to diffuse inflammation with necrosis. Some fatty change. Infiltration of leucocytes in portal sheaths. Proliferation of bile capillaries.

Kidneys.—Sub-acute parenchymatous nephritis, No bacilli seen.

Pancreas.—Slight necrosis of cells.

Thyroid.—Normal.

Mesenteric Glands.—Hyperplasia and acute congestion with commencing necrosis in the centre. By Löffler's method sections show B. Typhi in small numbers, in the characteristic clumps.

Peyer's Patch. A section was made through one of the Peyer's glands which presented the slight swelling. All that could be found was a proliferation of the lymphatic tissue in the sub-mucosa which was very generally infiltrated with lymphoid elements. This affected only the sub-mucosa. The patch was not congested and there was no evidence of necrosis. Stained by Löffler's method, in the deeper parts were found small clumps of bacilli resembling typhoid and which decolorised by Gram's method. On superficial part were numerous bacilli of various kinds, evidently intestinal bacteria which stained by Gram-Weigert method.

Bacteriological Examination.

Cultures from blood taken at autopsy were sterile. Serum gave the typical Widal-Johnston reaction. Cultures from the spleen on agar gave pure growth resembling typhoid. The bacillus was actively motile and negative to Gram. It was grown on gelatin, lactose agar, bouillon, potato and milk, and in every way corresponded to Eberth's bacillus. Litmus agar cultures have in our experience proved fallacious. Tested by the action of typhoid serum a typical Widal-Johnston reaction was produced. From the liver two varieties were obtained. One gave small round transparent colonies and when grown on the above mentioned media corresponded in every way to the B. Typhi, including the typical reaction to typhoid serum. The other presented colonies which were larger and more opaque than the first, and the growth on agar was more luxuriant and opaque in appearance than the typhoid. It however grew otherwise fairly characteristically, except that it curdled milk and did not give the true serum reaction

It may be said here that these tests were made by both of us independently and the results tallied exactly in each case. Parallel cultures of known typhoid germs were made also as controls, so that the chain of evidence should be as complete as possible.

From a study of the cases above referred to, it will be seen that this atypical typhoid is a very protean disease, its toxic power at one time being concentrated upon the mesenteric glands, at another upon the spleen, the liver and gall-bladder, the central nervous system, upon the kidneys, heart, or lungs, as the case may be.

While in typical typhoid the Peyer's patches suffer the most, yet the relative intensity with which the other organs are affected also varies. Thus, variability, while most characteristic in atypical cases, must be regarded as a feature common to typhoid as a whole. Clinicians have long recognized that one or more of the text-book symptoms may be absent, or in the background, and that cases, while they conform to a broad general type, often present minor differences. With respect to the intestinal tract alone, we now know that there may be all grades from a normal Peyer's patch to the most severe ulceration; not only so, but the usual intestinal lesions may be delayed. Cases have been reported recently where as late as the twenty-first day the Peyer's patches presented merely slight hyperplasia without necrosis. We must recognise then great variety in the intensity and course of the process.

Broadly speaking, typhoid without intestinal lesions falls clinically into three main classes.

1. Typical typhoid, minus the ulcerations.
2. Spleno-typhoid.
3. The nervous type, with extreme intoxication.

To the first group would appear to belong the cases of Banti, DuCazal and Cheadle. Diarrhœa may be present in such cases. Cases of this type are very rare.

The second class, spleno-typhoid, presents a more definite clinical entity, and was first described by Eiselt. This form is characterised by an excessively large spleen, often with acute perisplenitis, and fever of a recurrent type. In such cases the plasmodium malariæ and Obermeyer's spirillum are absent. Some of these cases do present ulceration of the intestines, but it is often absent.

Thue's case and Karlinski's first case are examples of this.

The third class, due to a severe intoxication, are characterised by extreme prostration, delirium, coma, sometimes hyperpyrexia, degenerative changes in the vascular system leading to purpura, hæmaturia, melæna. Jaundice is sometimes present. Many of these cases are, no

doubt, examples of secondary septic infection. To this class apparently belong the remaining cases of the table, including our own.

The case here reported at length presented on admission all the signs of an intense intoxication: extreme prostration, somnolence, high fever, muscular twitchings, delirium, coma, and eventually death. The digestive disturbances were decidedly in the background, thus showing that the activity of the process was more directed to the central nervous system. And there is, indeed, some ground for believing that where the intestinal lesions are slight or absent, the nervous phenomena are both relatively and absolutely more intense.

When we come to the etiology of such cases we enter upon more debatable ground. The usual channel of inoculation is, of course, the alimentary tract, but it is abundantly attested by several observers notably Roux and Sicard, that inoculation through the air-passages is by no means uncommon. Sicard, indeed, thinks that at least 10 per cent. of all cases come about in this way. Roux has noted that in barracks, epidemics of typhoid among the troops often coincided with the process of cleaning the walls and floors. Dufaud also has reported an epidemic where infection was carried by the dust in a building, and the disease only died out on a thorough disinfection of the building with sublimate. Cases occurring along the line of excavations are also known. In this particular, the experiments of Sicard are suggestive. He caused typhoid patients to exhale into flasks of sterilized water, and in nearly every case was afterward enabled to cultivate the Eberth bacillus from the flasks. The results of such experiments, when they appear to contradict our commonly accepted views as to the infectious nature of typhoid, must be accepted with some reserve, until other investigators corroborate them and place the matter beyond a doubt. It would seem probable at first sight that when the infection was acquired through the respiratory tract atypical typhoid would result, and it is by no means improbable that in such cases the brunt of the disease would fall upon the lungs, and that the intestines might only be slightly affected or not at all. In the absence of further information we are, however, unable to speak with any certainty upon this point. There is no doubt, however, that the B. Typhi have often been found in the lungs. Certainly the action of the B. Typhi at times analogous to that of other germs, notably the micrococcus lanceolatus, the gonococcus, the colon bacillus, and the pyogenic cocci, renders it altogether likely that some of these rare cases may be due to an unusual mode of origin. In our own case, however, we are enabled in all probability to exclude an origin through the respiratory tract, for the pneumonia which was present was clinically

a terminal event, and sections of the lung, stained by the Gram-Weigert method, showed such a massing of the micrococcus lanceolatus about the pneumonic areas that we were forced to conclude that the condition was due to a secondary affection with this germ.

Sections of the Peyer's patches showed, however, bacilli of the morphology of typhoid germs massed in the deeper parts in the characteristic clumps. So that the lowest Peyer's patches may have been the point of origin in spite of the fact that they presented so little divergence from the normal. A further point in favour of this view was the fact that the mesenteric glands were uniformly swollen soft ; some beginning to necrose, and others hæmorrhagic. How can we then explain these facts ? Observation gives us some information upon this point.

In relapsed typhoid the ulcerative lesions affect those glands which escaped in the first attack, and are also never so intense as the primary ones. Trousseau indeed goes so far as to say that in the relapse the intestinal lesions are not renewed. However this may be, it seems that the intestinal mucosa having once suffered the action of the typhoid virus can resist the force of a second attack, and thus a local immunity is acquired. So that in these relapses the systemic disease may proceed in the gravest manner and even lead to death, while the intestinal lesions are absent. In the case we record, considering that it was an ambulatory typhoid of six weeks' to two months' duration before admission, it is open to assume that the attack we observed was a reinfection, and that at some earlier period of the illness in the previous attack the Peyer's patches had acquired a local immunity. This primary attack need not necessarily have been a severe one. It is quite probable that in the so-called abortive typhoid the Peyer's patches never get beyond the stage of tumefaction, and yet they will have acquired an immunity for a short time. Cases where a second distinct attack follow shortly after convalescence upon a previous one would, at first sight, appear to negative this view, but we must remember that in experimental animals when this local immunity is attained, it only lasts for a short time, and we have no reason to think that it would be otherwise in the human being. This immunity affects the epithelial and lymphoid elements of the intestine and also the phagocytes, so that the bacilli are carried beyond the first barrier of defence, which remains intact, and are dealt with in the more remote parts of the organism.

We have an analogy to this in the well-known fact that the bacillus of tuberculosis sometimes passes through the intestinal mucosa without affecting the lymphoid elements, and may become localized in the mesenteric glands or in the peritoneum.

Or we may assume that certain ptomaines derived from the gastro-intestinal tract, either circulating in the blood, or present in the intestinal mucosa, act so as to neutralise the local action of the typhoid virus and bring about intestinal immunity. Finally, we may assume that toxins derived from germs other than typhoid may antagonise their virus and a local immunity be thus acquired.

To decide between these hypotheses is an impossible task in our present state of knowledge. As yet they are merely hypotheses, based, it is true, upon experiment, but exactly the degree of importance they possess in relation to the cases here referred to it is impossible to say. Still they are very suggestive. The first assumption indeed explains the process as a partial vaccination of the Peyer's glands and consequent immunity to a second attack. But why should the glands be singled out? Possibly the action of the intestinal mucosa in excreting circulating toxins may have something to do with this, the poison as it were being concentrated upon the emunctories, and thus an immunity is conferred upon the intestinal glands while other organs are not protected.

The last two hypotheses are based upon the theory of a mutual antagonism between the toxins of various germs. This opens up a vast subject in which we are still groping in the darkness of ignorance. The relations of the B. Typhi to the colon bacillus and other members of the colon group, and to the bacteria of the intestinal tract generally, are still unknown, although we are gradually beginning to see the light. But indeed the whole subject is so entangled with the variability in the toxic power of the germs concerned and the question of the resistance of the bodily organism, that the difficulties assume gigantic proportions.

The recent experimental studies of Sanarelli throw considerable light upon this subject.

It may be objected that no proper inferences can be drawn as regards the human organism from a study of experimental animals, but this is not so. The character of the lesions in the lower animals depends very much upon the amount of the toxin inoculated and its virulence. When strong toxins are used, a condition is obtained bearing very close analogies to that which obtains in the case of human beings, including the intestinal lesions.

Sanarelli took two series of guinea-pigs and administered for five days 4 cc. of a typhoid culture in glycerinated bouillon kept for a month in the incubator at 37°C., and then sterilised at 120°. In the first lot of animals the vaccine was introduced into the stomach by means of a sound, and in the second inoculated subcutaneously. The

last series of animals were used as controls to determine the limit of tolerance of the organism. It was found that when the animals which had received the typhoid poison through the stomach up to the limit of tolerance, were inoculated with even small doses of a virulent culture of B. Typhi they died in 8 to 24 hours, and presented neither meteorism, abdominal pain, nor intestinal lesions, while animals which had not been vaccinated died in about the same time, but with the intestines intensely congested and ecchymotic, lymphatic glands enlarged, and mucosa destroyed.

From these experiments it follows that when an organism receives doses of typhoid toxin within the limits of toleration, the intestinal tract acquires a local immunity. A subsequent injection with a virulent growth thus may produce death, largely through the nervous system, while the intestine remains normal.

Sanarelli also discovered the curious fact that subcutaneous injections of sterilized products of the putrid fermentation of beef-broth also conferred immunity upon the intestine, thus opening up the question whether ptomaines derived from abnormal conditions of the digestive tract in man may not have some bearing upon the question of the immunity of the intestinal tract.

This observer also noted the fact that in guinea-pigs suffering from typhoid, the colon bacilli in the intestine increased both in numbers and in virulence, killing out all the other germs, and is inclined to attribute some of the secondary processes in typhoid fever to the invasion of the body by these germs which have thus become pathogenic. An immunity of the organism to typhoid also proved to be an immunity against the action of the B. Coli. Klein's work, too, on the inhibitory action of certain germs, as the Prodigiosus, Komma bacillus, and putrefactive organisms, upon the typhoid bacillus is also very important in this connection.

Altogether Sanarelli's work is the most complete and suggestive one which has yet appeared, and we may reasonably hope for important developments along these lines.

We fear that this paper may appear to some too theoretical and visionary. It was not our intention, however, to lay down hard and fast principles, but rather to draw attention to lines of thought suggested by the newer pathology. Clearly our old views of the pathological processes in typhoid fever will have to be considerably modified, in fact almost replaced by a more adequate and elastic interpretation of clinical facts, and our conceptions, while at present losing definiteness, must acquire greater breadth until further research places the subject on a clearer basis.

That the field is an almost untrodden one, and that the clinical opportunities are so very limited, must be our excuse for bringing forward such an immature and altogether inadequate presentment of the subject. We must emphasize, however, our opinion that the current views upon typhoid fever are far too cramped and stereotyped to convey an accurate impression of the true nature of the pathological processes in this disease.

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DOCTORS AND THE LAW.

BY

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(Continued.)

CHAPTER V.

THE DOCTOR'S RESPONSIBILITY, IN REFERENCE TO INSANITY.

Having been requested to supplement a paper on "Doctors and the Law," which lately appeared in this journal, by a chapter on "Insanity" in the same connection, I gladly do so.

The doctor's relation to insanity is two-fold. (1) His services are always required in the confinement of the insane for the protection of society. (2) His expert evidence is necessary to support a plea of "insanity" from the criminal's dock.

(1) *The Protection of Society.*

The end is attained in two ways: (*a*) By Confinement in Asylums, and (*b*) By Interdiction.

(*a*) *Confinement in Asylums.*

The Revised Statutes of Quebec, Articles 3182, seqq., with their amending acts 52 Victoria, chapter 35; 53 Victoria, chapter 41; 54 Victoria, chapter 29; 55-56 Victoria, chapter 30; 56 Victoria, chapter 31; 57 Victoria, chapter 33; 60 Victoria, chapter 38, provide the necessary formalities As I fear they would prove somewhat a quagmire for the non-legal enquirer, I shall give in some detail those portions which are of interest to the general medical practitioner.

Asylums are Public and Private. There are also what are termed "Unlicensed Houses."

Public Asylums are those which are under the control and supervision of the Government. They are in this Province, the St. Jean de Dieu at Longue Pointe, Verdun, and Beauport, near Quebec. Private Asylums are under its supervision only. (54 Victoria, chapter 29, s, 4; 57 Victoria, chapter 33, s. 1.) Private Asylums are those licensed by Justices of the Peace, assembled in General Sessions. Unlicensed houses do not possess the same powers of detention and privileges as the above.

Two physicians' certificates are essential to the admission of a patient to any one of them, save in the case of an Unlicensed House. In the latter case one certificate suffices, "under special circumstances," provided the second is furnished within three days after admission.

The certificates must be signed by medical men, who are neither partners nor brothers, nor in the relation of father and son to each other, to the proprietors of the asylum or to the patient, and who have each, separately and personally, examined the patient before the application for his entry into the asylum. (57 Victoria, chapter 33, s. 6).

The form of certificate for admission to a Public Asylum is as follows:

PHYSICIAN'S CERTIFICATE.

PLACE AND DATE.

I, being a physician duly authorized to practice and habitually practising as such, do declare on oath that I am not related to, nor as respects the proprietors of asylum, within the conditions prohibited by law, concerning insane asylums, nor with (name of the person making the application) nor with (name of the patient).

That I have this day, separately from any other medical practitioner, visited and personally examined the said ; that the said is insane and is a proper person to be confined, and that I have formed this opinion from the following facts, which I certify to be true (give the details).

Sworn before me at } (Signature)

this day of 189 . } M.D.

(Signature)

Quality.

N.B.—(In cases of idiocy or imbecility state whether the idiot or imbecile be dangerous, a cause of scandal, or subject to epileptic fits, and mention the facts which show that he is dangerous or a source of scandal (57 Vic., cap. 33, s. 6).

In addition a form containing the following questions must be filled in. Relatives and friends must assist by giving information:

1. What is the patient's age to the best of your knowledge? 2. Is the patient married or single? If married, how long? How many children? 3. Where do these children live? 4. What is the patient's origin? 5. Are his parents still living? Where do they live? What is their name? 6. Where does the patient come from? In what municipality was he when sent to the asylum? 7. How long has the patient resided in Canada? 8. What has been the patient's occupation or trade? If a female, that of her husband and father? 9. What are his apparent means of subsistence, as well as of those who are obliged by law to support him? 10. What is the patient's religion? 11. What degree of education? Can he read and write? 12. When did the first symptoms of sickness manifest themselves? 13. How were the first symptoms of disease manifested? 14 Is this the first attack? If not, when did the others occur, and what was their duration? 15. Is there any improvement or aggravation in the disease or is it stationary? 16. When did the first symptoms of the present attack manifest themselves? 17. Has the patient any lucid interval, and do they occur at regular periods? 18. On what subjects, or in what way is derangement now manifested? Is there any permanent hallucination of sight, taste, touch or genital sense? 19. Has the patient shown any disposition to injure himself or others? 20. Was it from sudden passion or premediation? 21. Has suicide ever been attempted? If so, in what way? Is the propensity now active? 22. What are his habits as to eating, sleeping or cleanliness? Is there a disposition to filthy habits, destruction to clothing, breaking glass, furniture, &c.? 23. What relatives (including grandparents and cousins) have been insane, or had other nervous diseases, such as epilepsy, hysteria, tic, eccentricity, neuralgia, chorea, alcoholism, etc.? 24. Did the patient manifest any particularities of temper, habits or pursuits, or predominant passions, religious impressions? Has he been eccentric? 25. Was the patient ever

addicted to intemperance in the use of ardent spirits, opium, tobacco, in any form, &c., &c.? 26. Has the patient been subject to any serious bodily disease? To epilepsy, suppressed eruptions, discharges or sores, or ever had any injury to the head? 27. Has restraint or confinement been employed? If so, of what kind, and how long continued? 28. What is supposed to be the cause of the disease? 29. What treatment has been pursued for the relief of the patient? Mention particulars and the effects? 30. Please state any other matter supposed to have any bearing upon the case? 31. For references, address of the nearest relative or guardian, or friend, must be given in full, with place of their residence.

The requirements for admission to a Private Asylum are practically the same, save that it is not necessary to file answers to the above formal questions. They, however, demand in express terms that the two physicians shall have personally examined the person not more than seven clear days previously to the incarceration. (R. S. Q. 3263).

The form of certificate required in this instance is as follows:

FORM OF MEDICAL CERTIFICATE.

I, , being a physician duly authorized to practise as such, hereby certify that I have this day, separately from any other medical practitioner, visited and personally examined A. B., the person named in the accompanying statement and orders and that said A. B. is a lunatic (or an insane person, or an idiot, or a person of unsound mind) and a proper person to be confined, and that I have formed this opinion from the following fact (or facts) viz:

(Signed)

Name

Place of abode

Dated at this day of

one thousand eight hundred and (R.S.Q. vol. II, p. 67.)

The same certificate is required for admission to Unlicensed Houses. (R. S. Q. 3267.)

The facts upon which the physician gives his opinion in these certificates may be obtained from his own personal observation and from information received from others. (R. S. Q. 3190.)

No physician being an official visitor to any Private Lunatic Asylum can sign any certificate for admission or attend any inmate professionally, unless directed to visit such inmate by the person upon whose order such patient has been received, or by the Provincial Secretary, or by a judge of the Superior Court, or by the curator appointed to the interdiction of such inmate in the Province (R. S. Q. 3315). The penalty is a fine of $200. (R. S. Q. 3317.)

It is almost unnecessary to point out that the physician must rigorously conform to the requirements of the law respecting his certificate, for the purpose of avoiding future trouble.

The English Act provides that a medical practitioner who gives a false certificate, or any person not being a registered physician, surgeon or apothecary in actual practice, who gives certificates as such,

is declared to be guilty of a misdemeanor. For any such act done by a registered medical practitioner contrary to any of the provisions of the Act (although not declared to be a misdemeanor) he is subjected for each proved offence to a penalty of twenty pounds,

Fortunately for the medical profession in the Province of Quebec, these provisions do not exist in our Statutes No Statutory penalty is provided for the non-compliance with the formalities of the law respecting either public or private asylums. Nevertheless the physician would be responsible to the patient for whatever damage he might personally cause to him by his fault or negligence in this respect. Apparently no cases have arisen in this Province in which doctor's have been sued for such damages. They might result from such gross negligence as the absence of a *personal* examination or an examination made too long previously to be reliable. In any event it is well to follow the formalities laid down, with the greatest care.

But apart from the mere formalities of the certificate, the physician must state the grounds upon which he decides that the patient is an idiot, imbecile or insane. There can be no great difficulty concerning the two former, I imagine. The question is as to what facts justify a physician in declaring that an individual is "insane and a proper person to be confined," as required by the certificate. I do not propose to enter into a discussion of the vexed question, "What is insanity?" I am aware that the medical profession, from its vantage ground of science, is able to recognize the disease, where the public and the legal mind cannot do so.

It must be clearly borne in mind that the question, at this stage, is not whether the patient would be responsible under the criminal law. That arises after the act is committed. The question rather is, Does society require to be protected from this individual? Is he likely some time or other to become dangerous to himself or others or to create a scandal? It is upon these latter questions that the physician's opinion is thus required.

In this matter, therefore, we are limited to such insanity as in the opinion of the physician warrants the confinement of the individual suffering from it.

For an enumeration of the facts which justify this opinion, I refer to "Taylor's Medical Jurisprudence," pp. 512, 513.

In addition, the formal questions given above, which our Statute requires to be answered by the physician on information given him by the patient's friends and relatives, give an idea of the nature of the facts, which our law expects him to certify to, as the basis of

his opinion. As these questions have been given in full above, it is unnecessary to repeat them here.

A clear distinction should be drawn between the facts communicated to him by others and those observed by himself. Such expressions as "thinks" or "believes" should be avoided.

I have already pointed out that great care should be taken in following all the formalities required. Neglect in this respect would amount to legal fault, which entails liability in damages, should any be caused thereby.

If, however, the law asks for an opinion, he who gives it is protected if he has reasonable justification for it.

If the physician gives his opinion upon facts and circumstances generally accepted by the medical profession as evidence of dangerous insanity, or that which might create a scandal, he is free from liability. The farther he strays from this principle and permits his opinions to be influenced by extreme theories of mental responsibility, the greater danger will he incur of the courts refusing to approve it. But if the physician acts without malice, in good faith, and upon facts which reasonably justify his opinion, he need not fear the consequences More than this it is impossible to say, when thus discussing the matter in a general manner.

(*b*) *Interdiction.*

Article 325 of our Civil Code reads as follows:

"A person of full age or an emancipated minor, who is in an habit-
"ual state of imbecility, insanity or madness must be interdicted even
"though he has lucid intervals."

The interdiction is declared by the court, judge or prothonotary on the advice of a family council. Evidence is usually adduced before it, and the physician is almost invariably called as a witness. He can speak with great freedom in the witness-box. He is compelled by law to state his opinion. The family council and the judge or prothonotary is not in any way bound by it. If he testifies in good faith, without malice, to the best of his opinion and belief, he has nothing to fear. He has no responsibility.

(2) *Expert Evidence on the Plea of "Insanity," in Criminal Trials.*

To enter into the vast field of Medical Jurisprudence on this subject in an article of this nature, is impossible. It is interesting, however, to state that Canada to-day is, I believe, the only portion of the British Empire which has the law concerning the criminal responsibility of the insane in a concrete statutory form.

Article 11 of the Criminal Code reads as follows:

1. "No person shall be convicted of an offence by reason of an act done or omitted by him when labouring under natural imbecility, or disease of the mind, to such an extent as to render him incapable of appreciating the nature and quality of the act or omission, and of knowing that such act or omission was wrong.

2. "A person labouring under specific delusions, but in other respects sane, shall not be acquitted on the ground of insanity, under the provisions hereinafter contained, unless the delusion caused him to believe in the existence of some state of things which, if it existed, would justify or excuse his act or omission.

3. "Every one shall be presumed to be sane at the time of doing or omitting to do any act until the contrary is proved."

Mr. Crankshaw, in his excellent edition of our Criminal Code, thus comments upon this article: "It will be seen by this section that the defence of insanity, in order to be of any avail, must be supported by evidence establishing that the accused committed the offence either

1. While labouring under natural imbecility or disease of the mind to such an extent that he could not appreciate the nature and quality of his act, and could not know that it was wrong, or

2. While labouring under specific delusions causing him, though sane in other respects, to believe in the existence of some state of things which, if it existed, would justify or excuse his act.

So that, if the defence be actual insanity, the mere fact of the accused being insane would not of itself be sufficient. It must be shown also that when he committed the offence the accused was insane to so great an extent, as to render him incapable of appreciating the nature and quality of his act and to prevent him from knowing that it was wrong; and if the defence be that the accused, though sane in other respects, was when he committed the offence labouring under some delusion, it must be shown that the specific delusion under which he was labouring caused him to believe that there then existed a state of things which if it had existed in reality would have justified or excused his act.

Taking the law therefore as here expressed, a man may be insane and still be convicted of an offence. In other words, notwithstanding his insanity, he will be held responsible and punishable, unless his insanity was such that it rendered him incapable of knowing that what he did was wrong; and although a man may be labouring under some delusion when he commits an offence, he may still be convicted of and punished for that offence, unless the delusion were such that it made him believe that something then existed which, if it had been a

reality would have justified or excused what he did, as for instance a delusion that he was being violently attacked and in danger of being murdered, and that he was obliged in self-defence to kill his supposed antagonist."

Our law as it stands to-day renders useless to the expert in Canada, many of the discussions contained in the text-books. To make his evidence as to fact effective, he must bring it within the principles thus laid down. His own particular theories as to whether, morally speaking, the prisoner should be punished or not, are quite irrelevant.

If I entered more fully into the details of this question, I fear that my remarks would exceed the limits of this paper, perhaps already too lengthy. I therefore content myself with drawing your attention to the text of the law and suggesting its assimilation with text-book lore by each individual reader.

Case Reports.

A CASE OF PANCREATIC CALCULI WITH MELITURIA.[1]

BY

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My reasons for reporting this case are, that it is the first case of the kind occurring in the General Hospital clinic, according to the records obtainable, and that it is rare to find any gross lesion of this organ associated with diabetes.

The pancreas measures 8 inches in length and is about three times as large as the average pancreas ; its thickness is unequal ; it is lumpy, with intersecting grey bands, connecting prominent nodules ; to the touch it gives a crepitant feeling. On slitting up the pancreatic duct it is found to be unequally dilated. At the head, the duct measures $1\frac{1}{2}$ inches in circumference, at the body it is $\frac{3}{4}$ of an inch, and at the tail it measures $1\frac{1}{4}$ inch. In the main duct and its branches are masses of concretions ; the common duct is free from calculi. On section the tissue is tough and full of white concretions, filling the small ducts of the lobules. Practically no normal pancreatic tissue can be seen with the naked eye, chiefly fibrous tissue between the ducts ; no evidence of fat necrosis and no sign of hæmorrhages ; the concretions consist almost entirely of carbonate of lime.

The microscopical examination of the specimen shows chiefly fibrous tissue with small areas of gland tissue, the cells of which are immature in form, very much smaller than normal, and the ducts are filled with amorphous substance.

The patient was in the wards of the Montreal General Hospital and came under my care during Dr. Lafleur's absence.

Mrs. R., aged 48, widow, no family, weight 140, fairly muscular, and with a good layer of adipose tissue. Her complaints were those of gastritis, vomiting, and distress in the region of the epigastrium.

She was born in Scotland, and has lived in this country for eight years. Occupation that of a cook. Had typhus fever when 20 years of age, smallpox shortly after, and typhoid fever 14 years ago. She has used alcohol in the form of whiskey for some years, taking it usually before breakfast, but not to excess, but of late her chief

[1] Read before the Montreal Medico-Chirurgical Society, November 25th, 1897.

beverage has been beer. Her mother died of hæmatemesis, the cause unknown ; father of smallpox ; one brother and an aunt died of phthisis ; there was no history of cancer in the family.

Her illness commenced in December a year ago, with loss of strength and vomiting after meals. The vomiting would be repeated at intervals : on one occasion the vomit was dark coloured, but usually greenish. She has noticed a loss of weight for the past six months.

The physical examination was as follows : Skin dry, eyesight good, mucous membrane of good colour, tongue clean, reddish, slightly fissured near the tip, dry in the centre ; no evidence of any cutaneous affections except a few dark stains on legs. Respiratory system normal.

Heart slightly enlarged ; a soft systolic murmur is heard at the apex, not transmitted.

Liver has normal area of dulness.

Abdomen tumid ; no tumour palpable ; distention is chiefly gaseous ; patellar reflexes absent ; sensation normal.

The urine collected for eight days and, measured, averaged 44 ozs. per diem. It was light straw coloured. Sp. gravity 1036, acid, slight trace of albumen, and contained 1 per cent. of grape sugar.

The pulse ranged from 54 to 90 ; temperature, 97 to $98\frac{4}{5}$; constipation was present, but the stools were normal.

The patient remained in hospital on a fluid diet for 10 days and left much improved as regards her digestive system.

She returned to hospital six weeks later, on July 29th.

When admitted she was drowsy and complained of headache and weakness. Temperature 95°, pulse 120, small and thin, respiration 28. Her general condition was as before, with the exception of the urine, which contained a good deal of albumen with hyaline, granular casts and sugar.

The drowsiness deepened into coma, and she died 48 hours after admittance.

The report of Dr. Wyatt Johnston, the Pathologist, was as follows : There were firm adhesions to the chest wall of the pericardium and right lung at the upper part. A cavity, the size of a walnut, found in posterior surface of left upper lobe filled with greyish pultaceous matter ; no tubercle bacilli present.

Heart large and flabby, ventricles dilated, coronary arteries free, aortic valves thick and shrunken, mitral valves thickened at the edges.

Liver large, coarse looking ; greyish and opaque.

Stomach large ; no obstruction ; mucous membrane thickened and reddish grey.

Kidney large ; hog-backed shape ; slightly rough on surface.

Microscopically showed moderate diffuse increase of connective tissue, vessels thickened ; tufts fibrosed, numerous casts in tubules ; extensive parenchymatous and fatty change of epithelium.

The region of the medulla was specially examined and nothing found abnormal.

Nothing special in intestines.

The condition of the pancreas is described above.

The condition of pancreatic calculi is not a common one, and the literature on the subject is not plentiful. The best paper on the subject that I could find was by George Johnston, in *The Journal of the American Sciences* for 1883. He was able to collect 35 cases from the literature up to that time. He divides the varieties into three forms :

a. Free concretions.

b. Calculous concretions of the duct walls.

c. Acne pancreatica.

The greatest number belong to the first class, as does this case,

The latter class, described by Klebs, consists of a change of the normal pancreatic secretions into a fatty, chalky pap, seemingly an early stage of the concretion variety.

The conditions tending to the formation of these concretions are many and varied, a mucus plug, a catarrhal inflammatory condition of the duct, with thickening of the same, an interstitial inflammation, or a biliary calculus which has found its way into the pancreatic duct, any one of these conditions stagnating the flow of pancreatic secretions and a precipitation of the inorganic constituents.

Cases have been found where there was no obstruction, as in the present case, and yet calculi have been found. It is also found that in normal pancreatic juice there is but a very slight amount of lime ; yet, in the great majority of cases, the calculi are composed almost entirely of carbonate of lime. A comparison of pancreatic and salivary calculi shows that practically they consist of the same salts.

It is not probable that any of the concretions found in this specimen were passed, as there is no history of colic

The impaction of these calculi in the ducts is likely to follow with dilatation of the duct and the formation of cysts, the cysts being of a hæmorrhagic nature. No condition of this kind was found in this specimen suggesting the absence of any obstruction to any juice that may have been secreted. This is also borne out by the absence of fatty stools.

The diagnosis of pancreatic calculi is a difficult one.

Pain, one of the chief symptoms, is of two varieties.

The one dull, heavy, and a sense of weight localized in the epigastrium, lasting throughout the entire attack. The other sharp, severe, sudden in its onset, irregular in its accession, and spontaneously relieved. The first variety is thought to be due to pressure upon the cœliac axis, and would require to have an enlarged and hard pancreas, such as this patient had, and would account for the distress complained of by her.

Vomiting in 4 of the cases collected was one of the most distressing symptoms, in three other cases hæmatemesis, in six diarrhœa, and constipation in six others.

Fat in the stools is another important symptom. This condition has not been noted in many cases, and is not characteristic, as the same condition may be brought about by the obstruction of the bile duct.

Much more might have been done with this case had the condition been more favorable, and I have to regret that nothing of any interest in the obscure causation of diabetes mellitis was brought out.

INTESTINAL RESECTION IN A BOY OF FOUR YEARS—DEATH.[1]

BY

E. A. Robertson, M.D.

Cases of sarcoma of the mesentery and intestine are so rare, that I venture to-night to present you with a report of such a condition with the accompanying specimen.

I saw the patient first on the evening of Nov. 25th last. He was a boy of 4 years and 6 weeks old, of gypsy parentage ; well grown and fairly well nourished in appearance. His head was large and square. His eyes dull and languid, but without icteroid tint. His face full and plump, but flushed. His body was thinner than his face, but not emaciated. The muscles were flabby. The skin clear and free from eruption. The chest was well formed. The breathing, rapid and laboured, was evidently hampered by the condition of his abdomen, which was distended and rigid. He lay on his right side with his legs drawn up, the right one more so than the left. His temperature was 103°F. in the axilla, and his pulse rapid, though of good volume.

Examination of his abdomen showed a large tumour in the right lumbar region, extending downward to the level of the anterior superior spine of the ilium, and upwards about an inch above the level of the umbilicus. To the left it reached the middle line, and to the right it extended three inches toward the flank. It was hard, freely movable, and presented no signs of fluctuation, though a peculiar gurgling feeling, if the expression may be allowed, was imparted to the hand on gentle pressure ; as if the mass consisted of bowel or had bowel between it and the abdominal wall.

The abdomen was distended and tympanitic everywhere except over the tumour, where a dull note was brought out.

The belly-wall was tense and hard, but not very sensitive.

Ascites did not appear to be present.

Liver dulness was normal. Spleen could not be felt.

Heart and lungs normal.

The urine was scanty, but contained no sugar or albumen. The fæces were fœtid and not unlike the typhoid stool.

On questioning the parents, who were by no means intelligent, I was told that the symptoms were pain in the belly of a paroxysmal

[1] Read before the Montreal Medico-Chirurgical Society, Dec. 10th, 1897.

character ; profuse sweating ; fretfulness ; loss of appetite ; vomiting of food and green material during the two previous days ; and slight diarrhœa. They insisted that these symptoms had lasted only two weeks at the most, though they confessed that since a fall from a load of hay last summer, the child had not seemed as well as usual, that he had been much constipated and had been losing flesh. They had noticed the loss of flesh, because he had been a very fat child.

The diagnosis of intestinal tumours is always an interesting study, but generally very difficult to make absolutely. Many conditions might cause such a mass in the right lumbar region as existed in this case. Intussusception, enlarged kidney from various causes, fœcal accumulation, localized peritonitis, tubercular or otherwise, with gluing together of the bowels ; cysts of the mesentery and malignant disease of the bowel, were all to be thought of. It seemed possible to exclude intussusception. The attack was not sudden enough. The pain was not sufficiently severe. There was not complete obstruction. There was absence of blood in the stool. Vomiting was slight and not stercoraceous, and there had been absence of tenesmus. The tumour was not in the situation in which intussusception is most common, and it was harder and larger than the sausage shaped mass of that condition.

Enlarged kidney was improbable, because the tumour did not extend high enough up, and because of the normal character of the urine.

Fæcal accumulation in the situation occupied by the tumour has been stated to be impossible and could be dismissed.

Localised peritonitis with adhesion of several coils of gut, cysts or new growths of the mesentery or malignant disease of the bowel itself were all possible. I believed it to be the first of these conditions, probably associated with ulceration of the mucous membrane of the bowel.

As the diagnosis was thus by no means certain, and the child was evidently in a dangerous condition, I advised removal to the hospital, where an operation might be performed if necessary. This the parents would not consent to.

On the 27th of November, the parents asked me to call Sir William Hingston in consultation. I did so.

On examination, patient was found not to have changed much since my first visit. His pulse was 120 ; temperature 101° F. The pain had been more severe, coming on in paroxysms. Sweating was profuse. Loss of appetite pronounced. Secretion of urine scanty. Vomiting had ceased. Sir William Hingston made a diagnosis of new growth of the mesentery. We decided to await developments. After

watching the case until Dec. 2nd, and finding the patient to be steadily losing ground, with a decided increase of all the symptoms and return of vomiting, we decided to remove the patient to the Hotel Dieu. The parents were by this time ready to consent to an operation.

On Dec. 3rd, there appeared some sloughy, purulent material in a good sized pea-soup-like stool.

We decided to examine under chloroform next morning and operate if we judged it to be proper. During the day the rectum was washed out three times with warm water, and again next morning. A light diet of beef-tea and milk was prescribed, and nothing was given after 7 a.m. on Dec. 4th.

On that day chloroform was given and a careful examination of the abdomen made. It was found that the growth was larger than we had thought and dipped down well into the iliac basin in the cæcal region.

Both Sir William Hingston and I agreed that an operation was necessary.

After preparation of the hands and of the seat of operation I made an incision directly over the centre of the mass at the border of the right rectus ; extending from a point a little above the level of the umbilicus downwards three inches. The cut divided some of the outer strands of the rectus. There was but little subcutaneous fat and the belly wall was thin.

Having controlled hæmorrhage, which was slight, the peritoneum was carefully cut through. About two ounces of straw coloured fluid of fæcal odour escaped. The peritoneum was divided on a director the length of the incision, and at once the great omentum appeared in the wound. The opening was enlarged up and down a little with scissors and the hand inserted, when a large mass was felt extending deep down to the vertebral column. The omentum was adherent to its upper surface. These adhesions were tied with catgut ligatures and cut, and the omentum freed and drawn out of the way. More adhesions were found at the sides of the mass. The softer were gently separated and the firmer tied and severed. The tumour was now fully exposed, and was seen to consist of a mass of bowels, hard and leathery, and glued together into one solid lump. At one point was seen a large perforation through which fæcal matter began to ooze.

It was plain that we must remove the mass, as it was obviously impossible to leave a leaking intestine in the abdominal cavity.

The edges of the wound were therefore retracted, the fæcal matter swabbed away carefully, and the tumour delivered out of the abdomen. A mass of small intestines followed and were at once enveloped in warm aseptic compresses, which were changed from time to time

during the rest of the operation. The mesentery, which was thickened and evidently diseased, was ligatured in part; the rest was so friable that it gave way. The ileum and colon were secured with clamps and cut wide of the disease when the tumour was removed.

The ends of the bowel being disproportionate in size, a slice was cut from the ileum diagonally, at the expense of the part opposite the mesentery.

The clamps were taken off, and as no bleeding followed, the cut ends of the intestine were drawn out and irrigated with warm boiled water, in order to empty the bowel completely. A continuous Lembert suture united the colon to the ileum. An attempt was made to sew up the mesentery, but it was so friable the sutures cut through and it was abandoned.

The intestines outside were thoroughly irrigated with warm boiled water, and an endeavour made to return them. As this was difficult, an aseptic compress was placed over them and tucked under the edges of the wound. With very little trouble, the whole were then returned. As the bleeding points had all been secured with catgut ligatures and the hæmorrhage and oozing had been slight, a drain was not thought necessary, and the abdomen was closed with through and through silk-worm-gut stitches. The wound was dressed with iodoform.

The operation lasted an hour and a half, and the boy at the end was very weak, with a very frequent and feeble pulse. He was at once wrapped in blankets and removed to bed, where hot-water bottles were disposed around him and at his feet. An enema of warm beef-tea and brandy was given and a hypodermic injection of strychnia gr. $\frac{1}{120}$.

The child soon came out of the state of anæsthesia, but seemed greatly excited and restless. He vomited several times. His pulse was too rapid to count, and his condition bad. The enemas were continued every 2 hours, but he continued to sink, and at 11 P.M. he died, 8 hours after the operation.

Dr. Nicholls, of the Royal Victoria Hospital, kindly examined the specimen. His diagnosis was sarcoma of the small round-celled variety. In reviewing the case there are some points of interest:

There was an undoubted history of a fall six months ago. Symptoms only became pronounced three weeks before death, and nutrition was well maintained in spite of the great size of the tumour and the impending perforation.

Diminished secretion of urine was pronounced. Ashurst states that this symptom is generally present only in acute intestinal obstruction, and more often where the obstruction is high up and very complete.

The mortality statistics in cases in which resection of intestine has been done does not encourage surgeons to operate except in desperate conditions.

The mortality in all cases ranges from 48 per cent. to 100 per cent. in various tables which have been compiled. In children the mortality, as an average, is higher than in adults.

Cases in which resection has been done in conditions similar to my case are so rare that so far as I know no statistics are available.

Balyer has mentioned four cases of resection of intestine for primary sarcoma of the bowel ; of these 2 died, and the result of the others was not reported.

Primary sarcoma of the bowel is extremely rare. Balyer, quoted above, gives only 14 cases. Of these 92 per cent. were in males, and the majority of cases between the ages of 40 and 50. They were all of the small-celled variety. They did not produce intestinal obstruction.

In looking through the literature, I have only been able to find six cases of sarcoma of the mesentery reported. These were reported by Luke of Cincinnati, Stobbe of Leipsic, Masse of Berlin, Tamsburg, See and Arnott of London. Of these one was a myosarcoma, three were of the spindle celled variety, one was a myxosarcoma, the remaining one not classified.

The tumour, when fresh, weighed 585 grammes. Its measurements were 11.5 x 9.7 x by 9 c.m. The length of the appendix, which was normal, was 3.5 cm. The length of bowel removed was about 50 cm. The mass contains a part of the ascending colon, the cæcum with its appendix and a long piece of the ileum. All this, with the exception of a few inches of-ileum, is welded together into one solid mass. The free piece of ileum is thickened and leathery.

The perforation is near the junction of the ileum and cæcum and forms the outlet of a long tunnel through the thickened wall of the bowel. On the peritoneal surface, the borders of the perforation are raised and thickened. The peritoneum is thickened and covered in places with deposits of lymph, and completely invests the mass. Thus there was no meso-cæcum or meso-colon, a condition often noted by Treves and others.

The walls of the intestines are enormously thickened and friable. No ulceration of the mucous membrane is present except at the seat of perforation.

There is no obstruction anywhere to the passage of fœcal contents, the lumen of the bowel being permeable throughout.

Ephemerides, 1897.

By William Osler, M.D.

XX. The Blood Coagulation Time in Jaundice.

It has long been well known that in chronic jaundice there is a marked tendency to hæmorrhage, and in operating upon such cases surgeons have to count upon this as a possible serious accident. Within the past few years I have known of three fatal cases of hæmorrhage following operations under these conditions. A recent case suggests the possibility of the value of taking the blood coagulation time.

A man, aged 34, came under my care in May, 1897, with pains of a doubtful character in the abdomen. There was some increased acidity of the gastric juice with which we thought possibly they were connected. He did not improve, and returned at the end of September with jaundice. He had lost a good deal in weight, had much pain in the region of the liver, which was tender and slightly enlarged. The onset of the jaundice with pains suggested gall stones, and Dr. Finney operated. The patient almost bled to death on the table, blood oozing from the skin incision and from the deeper parts, and about the torn adhesions. As all efforts were occupied in controlling the bleeding, it was impossible to make any determination of the nature of the trouble. The wound was packed with gauze, and the patient was taken back to the ward in a very exhausted condition. He bled very actively every time an attempt was made to remove the gauze, and it was at least three weeks before all of it was taken out of the wound. His blood coagulation time, as taken with Wright's tubes, was between ten and eleven minutes, more than double the normal. It certainly would be advantageous to test this point in cases of chronic jaundice before operation, and it might be worth while also to follow out Prof. Wright's suggestion and to give the calcium chloride in full doses for a period of ten days in order to increase, if possible, the coagulability of the blood.

XXI. Facial Paralysis with Herpes Zoster.

The association of facial paralysis with herpes zoster has been recently studied by Eichhorst *(Centralblatt f. innere Med., 1897, Bd. 18,)* who has been able to add seven cases from the literature to the

list of eleven collected by Ebstein. The following case has recently come under my observation.

Dr. ———, aged 56, whom I have seen at intervals for the past two or three years, with chronic bronchitis and emphysema, came complaining of paralysis of the left side of the face with herpes behind the ear. For a week or ten days prior to the the onset of the eruption he had pains of a neuralgic character on the left side of the head. During this attack he came to consult me, and I found a small crop of fresh herpes in the mastoid region, extending to the nape of the neck along the line of the hair. He had evidently suffered a great deal of pain, and had been kept awake at night, and was a good deal pulled down. Two or three days subsequently he noticed that the face was drawn to one side. When I saw him the facial paralysis was complete on the left side, and it has persisted for now more than a month. Apart from the rarity of such cases it is interesting to note the persistence of the neuralgia before the onset of the herpes, the distribution of the herpes in the region of the cervical nerves, and the occurrence of the paralysis in the region of the facial nerve without any herpes in the area of its distribution.

XXII. Paralysis of the Ocular Muscles in Albuminuria.

In a case of motor oculi paralysis, in the absence of past diphtheria, we usually look for tabes or syphilis. I had never had my attention called to the possibility of its occurrence in albuminuria and Bright's disease, and I see no mention made in the last edition of Gowers, a work in which one usually finds reference to all recorded complications. Knies in his work on the relations of disease of the eye to general diseases states in connection with paralysis of the ocular muscles in albuminuria that "they are so frequent, however, that in every case of sudden or rapidly developing paralysis of the ocular muscles with the character of basilar, root or nuclear paralysis the urine should be examined for albumin. The cause generally appears to consist of a hæmorrhage in the region of the nerve roots or nuclei, possibly even in the nerve itself." The following case seems to belong to this group.

Mr. B., aged 52, seen in consultation with Dr. Scott, complaining of kidney trouble and diplopia. The patient had been a very healthy man. Syphilis could be positively excluded. Three years ago he had pains in the right back, and once a quite sharp attack, which was diagnosed kidney colic. He had pneumonia five years ago, and with those exceptions he had had no serious illness until June, of 1897, when he began to have headaches which troubled him a good deal.

Dr. Scott examined the urine and found that he had albuminuria. Tube casts were not discovered. He had dyspepsia and lost twelve pounds in weight. About the middle of June he had paralysis of the left external rectus, which caused a very annoying diplopia. The combination of headache with the diplopia led to the suspicion that there might be some serious brain trouble. He was given iodide of potassium: the headache gradually disappeared, and the paralysis of the external rectus has been slowly improving, so that now he has scarcely any trouble from it.

The patient was a very healthy looking man, with slightly more sclerosis of the arteries that his age alone warranted. The pupils were equal, reacted to light and on accommodation. There was no limitation of the fields of vision, the optic nerves were normal, and there were no changes in the retinæ. The knee jerks were present and his station was good. The urine at present contains no albumin. The case is of interest as syphilis and tabes could be excluded with certainty.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

The Roentgen Rays in Thoracic Diseases.

FRANCIS H. WILLIAMS, M.D.—"The Röntgen Rays in Thoracic Diseases." *The American Journal of the Medical Sciences*, Dec., 1897.

Dr. Williams has examined upwards of five hundred patients by means of the X rays, four hundred of these being medical cases. This article, dealing with diseases of the thoracic organs, is especially interesting to students of internal medicine, and if all that Dr. Williams claims for this new method of examination can be realized, much greater accuracy of diagnosis in the very early stages of disease will be secured.

The direct application of the X rays in examination, it would seem, supersedes the somewhat tedious and certainly expensive method of photography, the observer seeing the condition and describing it or sketching it on paper or upon the chest wall, from which it is afterwards transferred to paper.

Quoting directly from the summary which Dr. Williams makes of his own observations, we find the following chief conclusions:

1, The fluoroscope gives us better assurance that the lungs are in a healthy condition than other methods of physical examination, and in connection with auscultation and percussion, teaches us in disease to interpret better the sign found by the older methods.

2. The fluoroscope gives us earlier evidence of disease in some cases of tuberculosis, and more accurate information of its extent, than can be obtained by the usual physical examination.

3. The fluoroscope gives us more accurate information of the extent of the disease in pneumonia, and of the duration of an abnormal condition of the lungs.

4. It enables us to outline the heart more accurately and completely than has hitherto been possible and to observe certain changes in it.

5. It gives us the means of making an earlier diagnosis of some cases of thoracic aneurism than any other method, and enables us in certain cases to exclude it where it has been suspected.

6. It enables us to ascertain the cause in some cases of dyspnœa that would otherwise be obscure.

He further says the X-ray examination should be used in connection with other methods; the information derived from it in suitable cases is more definite and accurate than that obtained from auscultation and percussion.

Chlorosis and its Etiology.

CHAS. E. SIMON, B.A., M.D. "A Study of thirty-one cases of Chlorosis with special reference to the Etiology and the dietetic treatment of the disease."—*The Amer. Jour. of Med. Sciences*, April, 1897.

In the study of this series of cases Dr. Simon reaches the following conclusions:

1. An anatomical basis of chlorosis has not been satisfactorily determined.

2. A perversion of the appetite, excessive consumption of starches and sugars, is a common symptom of chlorosis.

3. The development of chlorosis is due to an insufficient consumption of animal proteids.

4. Chlorosis is far more common than is generally supposed, and occurs in both sexes and at almost all ages.

5. The diagnosis of chlorosis should be based altogether upon an examination of the blood.

6. The term chlorosis should be discarded and "simple anæmia" substituted.

7. Iron is not a specific in the treatment of chlorosis.

8. In the treatment of the disease attention should primarily be directed to the diet.

9. In cases in which iron fails, satisfactory results may be obtained, without medication, from a suitable diet, in which animal proteids, bone-marrow and dark beer are the principal factors.

10. The beneficial effects of bone-marrow are not due to the amount of iron which it contains.

Angina Pectoris.

J. H. Musser, M.D. "Angina Pectoris: its relation to dilatation of the Heart."—*The Amer. Journal of Med. Sciences*, September, 1897.

After indicating the physical signs from which a diagnosis of cardiac dilatation may be made, Dr Musser details cases illustrative of the following points:

1. When dilatation of the heart supervenes in a patient the subject of an attack or attacks of angina pectoris, the subjective symptoms may subside. At the same time the physical type of the individual changes.

2. Angina pectoris may occur in a patient who has had dilatation of the heart when the organic condition (dilatation) is removed by treatment.

3. True angina, when it occurs in dilatation of the heart, admits of a prognosis more favourable than when it occurs with other mural conditions, as myocarditis or hypertrophy without dilatation.

4. Grave cases of dilatation of the heart, conversely to the above, may be looked upon as amenable to successful treatment if the patient should have paroxysms of true angina pectoris.

5. In the treatment of angina pectoris digitalis is of doubtful value, not to be given unless there is an excess of dilatation.

6. The pain of angina pectoris appears to be due to increased intraventricular pressure, although other causes are no doubt operative.

Abscess of the Brain following Suppurative Process in the Frontal Sinus.

Dr. Treitel, in Berlin. "Ueber Hirnabscesse nach Stirnhöhlenesterung."—*Deutsche Medicinische Wochenschrift*, No. 47, 1896.

The relationship existing between suppurative process in the brain and in the middle ear is well established and widely recognised.

It would appear, however, from this writer's statistics that about 33 per cent. of the abscesses of the brain had their origin in some suppurative ear disease, while the balance is divided among other causes.

From the fact that in 120 cases of frontal sinus suppuration analysed by Engelmann, only five cases of abscess were discovered, it appears that this was not a very common etiological factor. This view seems to gather strength from Dr. Treitel's search through the literature, which resulted in finding but 21 recorded cases of disease of the brain following a suppurative condition in the frontal sinuses, and of this number, thirteen were abscess formations.

It is of much importance, however, as an etiological factor. In the cases carefully analysed it was found that the posterior wall of the sinus became carious, and thus the brain at that part became involved. It is possible, that where a non-carious process in the sinus is followed by a suppurative process within the skull, or where in obscure cases no pus is found in this sinus, that extension may take place through the horizontal plate of the ethmoid bone, which is commonly affected in frontal sinus cases.

Tabes and Aortic Insufficiency.

Dr. H. Ruge and Dr. W. Hüttner. "Ueber Tabes und Aorten Insufficienz."—*Berliner Klinische Wochenschrift*, No. 35, 1897.

That aortic insufficiency and tabes dorsalis are seen associated in a number of cases sufficiently large to suggest something more than coincidence is well established, although Leyden and a few other noted observers, speak against these diseases having a common origin in syphilis.

Dr. Ruge and Dr. Hüttner in Prof. Gerhardt's Clinic at Berlin, having examined 138 cases of tabes dorsalis, found 12 cases having valvular disease, nine of which were pronounced aortic incompetency, two mitral regurgitation with slight changes in the aortic valve, while one case was that of aortic stenosis.

Thus in 6.5 per cent. of cases of tabes, aortic regurgitation was noticed.

In $\frac{1}{12}$ of these cases so complicated it appeared that syphilis was more or less certain as a factor; at any rate altogether too frequent to allow of this being considered merely as a coincidence.

A search through the literature on this subject supports the stand taken by these two observers, and numerous quotations of cases are made; some, however, are not willing to regard the degenerative changes in the cardiac valves as due to syphilis.

The aortic valve, compared with the mitral valve, is affected in the proportion of 10 to 2, while other statistics show a relation of 17 to 7.

The Joint Complications of Gonorrhœa.

Dr. F. Konig, in Berlin. "Ueber Gonorrhoische Gelenkentzündung."—*Deutsche Medicinische Wochenschrift*, No. 47, 1896.

The various articular complications following upon an infection with gonococci Dr. König classifies under four groups:

1. Hydrops of the joint.
2. Hydrops of the joint of sero fibrinous or catarrhal variety.

3. Empyema of the joint.

4. Phlegmon of the joint, in which the surrounding soft parts may become extensively involved as well.

Another group might be considered, viz.: that known as neuralgia of the joint due to this cause. Prof. König does not consider that such a division is warranted since such pains are associated, in his mind, with distinct organic changes within the joint. The careful search for the micro organism of gonorrhœa in the writer's experience has not been rewarded by discovery, and many of his cases are classified on a purely clinical basis.

The first two groups are generally light and rarely call for radical measures.

That which concerns the other two recognised groups is vastly different. A tendency to ankylosis is very marked in such cases, even more so than in any other form of articular disease.

The treatment recommended in gonorrhœal arthritis varies with the variety of the disease with which the clinician has to deal. In those cases in which there is not more than an *hydrops* of the joint Dr. König recommends the withdrawal of the fluid and then the injection of carbolic acid.

The phlegmonous cases generally need puncture or incision with thorough clearing away of the fibrinous exudate. Treatment with strong solution of carbolic acid is also recommended in these cases.

Less radical measures are sometimes of use in reducing the swelling, and among vesicants Dr. König speaks most favourably of the tincture of iodine, which must be applied very frequently if good results would follow.

Rest in hand and foot joints and extension in hip joints are important measures in the treatment of these forms of arthritis.

The treatment of a joint after ankylosis has taken place is very unsatisfactory. The use of the Röentgen rays may decide the question as to the presence of bony ankylosis.

Any attempt to mobilize such joints is attended with such pain, and is so wearing upon a patient from the length of time passive movement and massage must be kept up, that failure is almost certain. However, something may be done by such means in some cases.

The Cause of Splenic Enlargement in Cases of Hepatic Cirrhosis.

Dr. F. Parker Weber. "The cause of plenic enlargement in cases of hepatic cirrhosis."—*The Edinburgh Medical Journal*, Dec., 1897.

Until recently the generally accepted explanation of splenic enlargement in cases of cirrhosis of the liver was passive congestion. This

view of the cause is being called more and more into question, for the following reasons adduced by Dr. Weber :

1. In cases of chronic passive congestion in valvular heart disease the spleen is generally found small. Kelynack's finding of the spleen in a considerable number of post-mortem cases shows the spleen of hepatic cirrhosis to have an average weight of 12.93 ounces against an average of 7.32 ounces in cardiac cases.

2. The greatest enlargement of the spleen is not found in those cases of cirrhosis where portal obstruction is greatest, but rather in those cases where portal obstruction is least and where ascites is delayed.

The real cause of splenic enlargement in such cases of cirrhosis seems to be a toxic substance not necessarily microbic, which calls forth in the spleen the change—a " vital reaction "—by which enlargement is brought about.

This toxic substance may be something normally excreted by bile, for the enlargement is most marked in those cases where the *biliary* flow is most hindered.

On the other hand the enlargement in the two organs may arise from a common cause, although it is more reasonable to regard the changes as primary in the liver, and that from this the auto-intoxication has originated.

W. F. Hamilton.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Tetanus.

GOODRICH. "The geographical distribution, prophylaxis and therapeutics of tetanus."—*Annals of Surgery*, December, 1897.

DENNIS. "The treatment of tetanus."—*Annals of Surgery*, December, 1897.

Although it can hardly be said to be a common disease in Canada, yet cases of tetanus do occur now and again, and the results are so often fatal that any new light on the prophylaxis and treatment can not but be of great interest. The tetanus bacillus flourishes best at body heat, or heat in slight excess of normal human temperature. The nations that inhabit tropical regions are reported as "exceedingly susceptible" to the disease, but it is highly probable that surroundings play a much greater part than any supposed racial vulnerability and the fewer cases occurring in the north are evidence of the inability of the bacillus to flourish in cold climes.

In India tetanus is very prevalent. In one hospital in Calcutta eighty-three cases were treated in five years. In another fifty-six were treated in a like time. In Bombay 1,955 cases were reported in five years. Remarkably numerous are the cases among the grain dealers of Bania, who work in dust, and who frequently use manure as poultices for wounds and boils.

"Larrey had great experience of this disease during Napoleon's campaign in Egypt," says Erichsen. Larrey had scores of cases after the battle of Waterloo, and this was merely a repetition of his experience after Dresden. On the other hand, cases were rare after the engagement at Moscow, and this in spite of the cold weather and the frightful exposure endured, which were factors supposed by the older authorities to favour the development of the disease.

But few cases are reported from England, Ireland and Scotland. It occurs quite frequently in some parts of the United States.

It is said that the specific organism of tetanus abounds in and upon stable floors, but the equine theory of the disease was disproved by the experiments of Dantes, who made cultures in the New Hebrides Islands from the mud with which the natives poison their arrows, and

found the bacilli of tetanus and of malignant œdema where no horses exist.

In the matter of treatment, the preventive should receive first attention. The best results are to be obtained by careful disinfection of the wound in the first instance. Wounds inflicted by rusty nails, and wounds which have been brought in contact with garden earth or manure or soil suspected of containing tetanus bacilli, should be thoroughly washed and scrubbed with warm water and soap and then with some germicidal solution.

Tizzoni and Cattani, as the result of experimental demonstrations, believe that silver nitrate in one per cent. solution is the most potent germicide for the tetanus bacillus for general use in wounds as a preventive injection. They claim that the bacilli and spores are destroyed in one minute.

Larmant says that iodoform applied to a wound comparatively fresh is capable of neutralizing the tetanagenic virus.

Roux has tested the power of tincture of iodine in this line, and recommends its use in all dirty wounds. Tizzoni and Cattani have corroborated his experiments.

Sternberg has shown that a 5 per cent. solution of carbolic acid, or a 1 to 1,000 solution of bichloride of mercury, to which is added a $\frac{1}{2}$ per cent. solution of hydrochloric acid, will kill the spores in ten minutes.

The bacillus of tetanus cannot live in the presence of oxygen, and therefore hydrogen peroxide is probably a good local application.

The washing of these suspected wounds should be thorough. All scabs should be removed and at once burned, since the bacilli have been found in these crusts. It would seem also that the spores develop better under special circumstances of a mixed infection, and this fact furnishes another strong reason for carefully cleansing these wounds in order to destroy the microbe of suppuration, notably the streptococci and the staphylococci.

The actual cautery has been recommended, but its use would require anæsthesia. Some have advised the amputation of the wounded member. This is an extreme measure that would need to be undertaken immediately after the infection to be of any service, and only under very exceptional circumstances could it be very seriously considered.

It is a good plan to make a series of cultures from the contaminating material in the wound and obtain a solution of them for hypodermic injection into a mouse. If the mouse develops tetanus, which it will do if infected, or if the microscope reveals the bacterial drumstick

in the cultures, practise excision of the injured area or destruction by the actual cautery.

As the elimination of the toxines of tetanus is chiefly by the kidneys, the imbibition of large quantities of fluid is indicated. The saliva has also been said to be a channel of elimination. The function of the skin has not been proved to be of any avail in eliminating the poison.

In the treatment of tetanus it cannot yet be shown that antitoxines gives much better results than the old method of treatment by antispasmodics, etc. There is this to be said, however, that cases are badly reported, and that the cases treated by the antitoxine alone without other aid are not numerous. Again, probably the great majority of the cases treated by antitoxine have been reported; it is highly probable that many of the cases treated in the old way have not been published, particularly if they ended fatally.

It would seem from the tables collected by Goodrich that the rate of recovery is higher under the antitoxine treatment in those cases having short incubation. The supremacy of the antispasmodic treatment seems most marked in cases of unknown incubation, where, in most instances, no wound was discovered. Goodrich thinks that of the different antitoxines Tizzoni's product has undoubtedly been the most successful. On the other hand, Welch believes that the longer the period of incubation the better will be the results from the use of antitoxine, and that this remedy is of little value with a short incubation period—that is, less than seven days.

Dennis emphasizes the method of administration of antitoxine, and thinks that it is sometimes given in doses too small and too infrequently repeated; for example, one surgeon reports three cases of tetanus treated by antitoxine, but in all three the serum was only given once in one case, twice in another, and three times in the third. All these patients succumbed, but the test was not a fair one, as the remedy was improperly used. The dose should be at least twenty cubic centimetres, three times daily, and in some cases even larger.

Antitoxine is also being used as a immunizing agent in cases where there has been reason to fear the development of tetanus, as in wounds infected with garden earth, plaster, manure, or stable dust. If as good results can be obtained in immunizing against tetanus as have been obtained in immunizing against diphtheria, the antitoxine will prove a valuable preventive, if not as successful a curative agent as one might desire.

Bazy, a French surgeon, had four fatal cases of tetanus in his practice in one year, and subsequently began injecting twenty cubic

centimetres of serum into all patients who suffered from lacerated wounds into which extraneous matter had of necessity entered. Since he adopted this practice tetanus has not followed in those cases in which a strong probability existed that this dreaded disease might develop.

Lambert mentions that Nocard, in veterinary surgery, immunized 375 animals, and in no single case did tetanus develop, while he had 55 cases of the disease in animals in the same environment.

The use of the antitoxines should be continued for some time after symptoms have disappeared, and when used for immunizing purposes a dose should be given in the second week, and probably repeated again in the third week. The reason for this is that the antitoxine does not kill the tetanus bacilli nor the spores, but it destroys the action of the toxines. So that if some of the spores remain quiescent they may develop into bacilli after the antitoxine has been eliminated. Toxines then produced will be absorbed and additional antitoxine must be administered.

Geo. E. Armstrong.

Gynæcology.

The Treatment of Abortion.

Henry J. Garrigues. "The Treatment of Abortion."—*Medical News*, Nov. 6th, 1897.

Garrigues does not approve of the two terms abortion and miscarriage having different meanings according to the period of gestation reached, but considers that both should mean the interruption of pregnancy at any period previous to the possibility of the birth of a viable child: that period is the end of the sixth month, the birth of a fœtus between that time and the termination of the normal period of gestation being called a "premature labour." Abortion is most frequent during the third month of pregnancy, the frequency diminishing in the second, fourth and fifth months.

He divides the treatment into prophylactic and curative, the first being especially required in habitual abortion, *e.g.*, in syphilis, where by treating both husband and wife future abortions may be prevented. Change of residence will be found to be necessary where the district is malarious, or, if the uterus be in any abnormal position, it should be replaced. Where no cause is to be found, the patient should be kept in bed for a week at the time when menstruation is about due, and should be given viburnum during that time and general tonics in the intervals.

Where abortion is merely threatened, rest in bed and the exhibition of viburnum, opium and salines, with the local application of an ice-bag to the hypogastrium will often be successful in arresting it, but, where it is inevitable, the writer strongly advises speedy removal of the ovum. He does not approve of tamponade of the vagina unless the patient is very weak and you desire to allow her to rally, or else where it is necessary for her to be removed to some other building. Where a tampon is required, he packs the upper part of the vagina with iodoform gauze, introducing one end into the uterine cavity, and fills the lower part of the vagina with pledgets of absorbent cotton, wrung out of a one per cent emulsion of creolin.

Where active interference is indicated, instruments are preferred to the fingers for the purpose of effecting dilatation of the uterine canal, and Thomas' large, dull wire currette, aided by the finger, is used for

separating and extracting the ovum, although the Récamier curette is better where the age of the ovum is less than two months.

Where the uterus is small, the vagina only is packed, but where gestation has reached the third month, it will be best to also pack the uterus with iodoform gauze after complete removal of the ovum, an intra-uterine douche of creoline emulsion (1 per cent.) being previously given.

Amputation versus Repair of Cervix.

Thomas Adis Emmet. "When to amputate in preference to the repair of a lacerated cervix."—*American Gynæcological and Obstetrical Journal*, September, 1897.

Dr. Emmet formerly held that in almost every case of lacerated cervix the tissues could be brought so near to a normal condition by local treatment that a repair of the laceration was sufficient to effect a cure, but, in the above paper, he acknowledges that there are many cases in which this line of treatment will fail and where it will be necessary to amputate the cervix.

Among the patients requiring amputation of the cervix are the majority of hospital patients who cannot afford time to lie up and be treated for a sufficiently long period. Another class includes those women whose nutrition has been very much impaired through the sympathetic system, and as a result of the long standing injury. Here, no improvement in the general health can take place as long as the cause of the irritation exists, and if this is not removed as speedily as possible, there is a strong probability that the constitution will become fatally undermined, the writer mentioning also the frequency with which carcinoma develops—synchronously with a laceration of the cervix.

For some reason which is not stated, Dr. Emmet does not practice the operation known as Schroeder's amputation of the cervix, but follows a method of his own, in which he removes a conical portion of the cervix, the apex of the cone being uppermost, and sutures the mucous membrane covering the vaginal portion of the cervix to that lining the canal of the latter, with the usual suture in each lateral angle. After the cervix is drawn down as far as possible, in order to put the blood-vessels on the stretch and so prevent hæmorrhage, the cone is removed piece by piece with scissors, great care being taken not to open into the bladder or peritoneum.

The material used for the sutures is silver wire.

F. A. L. Lockhart.

Syphilis of Sexual Organs in Woman.

NEUMANN. "Syphilis of sexual organs in woman."—*Wein. Med. Woch.*, No. 20, 1895.

Neumann says that of the earlier exanthematous syphilides, none can be clearly diagnosed on the cervix or vagina above the vulva, except mucous papillary growths. Of primary lesions only 55 were detected in 800 infected patients; in 51 the portio-vaginalis, and in 4, the vagina was attacked—about 1 in 15 cases. Gummata are far more frequent, chiefly in the introitus and lower third of the vagina. Obstinate recurrence of these syphilitic lesions of the vagina have been observed. Syphilis of the tube and ovary is a rare and very indefinite complication. There has been only one case of syphilis of the body of the uterus recorded. Metritis and endometritis often kill the fœtus in syphilitic patients, but Neumann does not think these complications are in themselves specific. They come on in any woman otherwise out of health, and the debility caused by the syphilis, not the infection itself, may produce the endometritis. Syphilitic disease, however, of the placenta is well recognized, and is the cause of death of the fœtus for want of nourishment.

There is a case now under my care in the Montreal General Hospital of a large excavated ulcer on the anterior lip of the cervix. There is additional history of direct infection from the husband. There are no other points of infection either on the vulva or vagina. This patient, on admission, had a bubo of the right inguinal region, outside Poupart's ligament. These glands have been excised and found to be disintegrated and contain pus. The hypogastric glands, I have no doubt, are also infected and will some day give trouble in the formation of a retroperitoneal abscess. The cervical ulcer was destroyed thoroughly with the thermo-cautery. There are no evidences, as yet, of secondary exanthemata, which will be carefully watched for.

Pathology.

UNDER THE CHARGE OF J. G. ADAMI.

Upon Glycerinated Vaccine Lymph.

THORNE THORNE, AND COPEMAN, S. M. "Report to the Local Government Board on the Preparation and Storage of Glycerinated Calf Vaccine Lymph."—London, 1897.

COPEMAN, S. M., AND BLAXALL, F. R. "On the Influence of Glycerine, of Lanoline and of Vaseline, in Inhibiting the Growth of Microorganisms commonly found in Vaccine Lymph."—Twenty-fifth Annual Report of the Local Government Board, 1895-96, p. 283.

Absolutely essential for the preservation of public health as is the process of vaccination, and mild as is the course of vaccinia in the vast majority of cases, it must be admitted by all who have studied the minute anatomy and the bacteriology of the skin, that, however carefully the inoculation be performed, there remains a remote danger of secondary infection. However healthy the individual, there are parasitic upon his skin numerous bacteria of many species. However carefully we attempt to sterilise the skin, it is impossible to destroy all these bacteria, for some find their way down the hair follicles and along the ducts of the sebaceous and sudoriparous glands to the deeper layers, and, as Welch and his associates at Johns Hopkins have shown in their admirable studies upon this subject, although the strictest antiseptic methods have been employed, a skin-wound cannot be rendered perfectly free from germs; even with the most thorough technique the growth of these parasitic bacteria cannot be prevented. Happily the form usually parasitic upon the skin are free from pronounced pathogenic action. Nevertheless it may happen that pathogenic pyococci, the bacillus pyocyaneus, streptococci and other microbes possessing definite virulence are to be detected.

Thus we cannot be surprised if such pathogenic forms are to be isolated from the contents of vaccinal pustules, and if occasionally their growth leads to more than local disturbances; if, in short, there should at times be erysipelatoid, septic or other complications, despite all reasonable care.

But the converse is equally true: the greater the care, the more we preserve the region of inoculation and of eruption in a cleanly condi-

tion, the more we assure ourselves that the lymph employed is uncontaminated, the less do complications manifest themselves, until in the hands of cautious and conscientious vaccinators such complications approach the vanishing point.

Can we, it may be asked, hope eventually to rid ourselves wholly of this remote danger of septic infection? Is their any likelihood that the good effects of vaccination can be attained by other means, or that we shall be able to render the system immune to small-pox without setting up, what I have previously in this JOURNAL pointed out, can only be regarded as a mild, attenuated form of the disease? The answer to this question must be a qualified negative. Of other diseases, in which the specific or causative microbe has been discovered, we know this, that the most long continued immunity is obtained by inducing a mild form of the disease, and by inoculating the attenuated germ. Immunity, it is true, can be gained by other means, by injecting the products of bacterial growth (toxines), or again the substances developed in the blood and tissues of animals that have been rendered immune (antitoxines). But immunity so induced is of short duration. With our present method of vaccination the immunity against small-pox lasts only for from four to twelve years (as the result of a single vaccination): any milder method would be too transient in its benefits. Add to this that we do not as yet know what is the pathogenic agent in small-pox, and so cannot as yet employ the toxines, while experiments made with antitoxines have been most unsatisfactory. If, therefore, we wish to immunise against small-pox we must continue to confer the mild disease, and must inevitably set up a mild cutaneous eruption with its remote dangers of secondary infection. We must find satisfaction in the fact that the unpleasant character of the local eruption, in vaccination, and the remote danger to which I have referred, are as nothing compared with the public and personal security gained by this procedure.

Accepting then that it is our duty to vaccinate, it is evident that it is equally our duty to minimise the tendency towards the development of secondary infection at all stages of the induced disease. Such secondary or complicating infection may arise from two, or more correctly, three sources: (1) The presence of pathogenic micro-organisms parasitic upon or in the skin; (2) Contamination of the vaccine lymph; (3) The introduction from without of pathogenic micro-organisms into the vaccinal eruption. Happily the danger from the *first* of these sources can be rendered minimal. Virulent microbes rarely enter deeply into the healthy skin; hence sterilisation of the surface of the skin by approved methods antecedent to inoculation

tends to remove or destroy the harmful bacteria which may be present. The forms which cannot be destroyed because of their situation in the deeper layers are almost constantly either quite harmless or of very feeble virulence, and while these are liable to proliferate in the vaccinal pustule they neither spread into the surrounding tissues, nor are they liable to cause sepsis by the absorption of their products of growth. The *third* source also is capable of being guarded against; if the scarification be made with a sterilised instrument, if the region of the eruption be kept clean and protected against injury, if again the crust or scab be preserved intact, and if, further, the inflamed area be kept dusted with boracic acid or other powdered antiseptic, there is very little chance of infection during the progress of the development of the eruption.

Contamination of the vaccine lymph is a danger which even at the present day is too little regarded here in Canada, as in English speaking countries generally. It is true that the process of arm-to-arm vaccination is steadily dying out, but our governments have as yet failed to make any regulations compelling the public to be served with lymph that has been tested and found free from extraneous germs, and the time is ripe for legislation to this effect.

Examine bacteriologically the fresh lymph obtained from any human being or calf, and it is found to contain abundant bacteria. As I have already stated, these in general are harmless; nevertheless it is possible that among the harmless there may creep in by accident or chance forms that are dangerous. In the calf this danger may be largely though not entirely controlled by killing the calf after the lymph has been collected, and examining the various organs. This is done in Germany, when if any lesion is found the lymph is condemned. Or again, the danger of tuberculosis may be controlled by the diagnostic employment of tuberculin. In man it is not possible to make such thorough investigation of the individual supplying the lymph, and very rightly, therefore, arm-to-arm vaccination has received now-a-days general condemnation.

Copeman found that there are at least three species of microbes, one or more of which are almost universally present in every sample of human or calf lymph examined. These are the M. epidermidis albus (a form usually found in the upper layers of the skin of healthy individuals apart from vaccination), the Pyococcus aureus, and the Staphylococcus cereus flavus.

The two last forms are found often as the agents of pus production. As Welch has shown, the first also under special circumstances may lead to suppuration. This, however, must be admitted that the S.

cereus flavus has feeble pathogenic powers, as also that the Pyococcus aureus, together with another pus producing organism occasionally present (the Streptococcus pyogenes , vary greatly in virulence, so that very frequently inoculations of pure cultures lead to little beyond local and transient irritation. We are still in ignorance of the laws governing these variations in virulence of some of the most widely diffused pathogenic microbes. Yeasts, sarcini and other non-pathogenic organisms are also to be found in most samples of freshly obtained lymph, whether human or bovine.

So long ago as 1869 Müller showed that vaccine lymph might be diluted with glycerine and still retain its properties unimpaired. The dilution was apparently utilised for many years purely as a means of increasing the amount of material available for vaccination. A point which apparently has escaped Dr. Copeman's notice is, that for some years prior to his researches, the British Army Veterinary authorities at Aldershot, under the able direction of Captain Fred. Smith, had employed dilution with equal quantities of pure glycerine and water as a routine practice, inasmuch as after many experiments they found that such dilution was the best means of preserving lymph during transmission to India and other tropical stations, and that such lymph appeared actually to increase in potency. Indeed, in 1890 Dr. Smith and I undertook sundry observations based upon these preservative properties, our observations leading, it is true, to no definite results. Our main attempt was to determine whether the glycerine extracted and preserved some ferment-like body from the (unknown) vaccine germ, or whether this germ could be grown and studied upon media rich in glycerine.

It was, however, left to Copeman to explain the main action of this admixture with glycerine. He showed, at the meeting of the International Congress of Hygiene, in London, in 1891, that the addition of suitable quantities of pure, acid-free glycerine to vaccine lymph inhibits the growth of extraneous micro-organisms, and that in the course of a few weeks they are practically all killed out. Thus then lymph treated with glycerine becomes in the course of a month or so free from contamination. All pathogenic microbes present by chance in such lymph and all harmless bacteria, save these possessing spores, die off; if spores be present they do not germinate. Here clearly is a means of preparing a virus that is absolutely safe, *i.e.*, that will not, when inoculated, introduce into the system any extraneous pathogenic germs capable of setting up complications. What is more, the lymph actually appears to gain in strength; whether simply from the destruction of counteracting germs, or from some multiplication of the vaccine

virus, it is as yet impossible to state. But gain undoubtedly three is. At the animal vaccine establishment of the Local Government Board in London (where after the manner of British Government offices innovations show themselves slowly, and admixture with glycerine had not been generally employed, even though its utility had been demonstrated by an official of the board)[1] " it has hitherto not been deemed necessary, or even expedient, to make one calf serve for more than some 200 to 300 vaccinations. It is no unusual thing abroad to provide from a single calf an amount of glycerinated lymph that shall serve from 4,000 to 6,000 vaccinations, and in Berlin we were assured that the glycerinated lymph which was prepared in our presence from one calf would suffice for no less than 15,000 vaccinations."

Although in English-speaking countries the use of glycerinated lymph has not become general, it is universal in Germany and is employed in the government stations of France, Belgium and Switzerland ; for Copeman's observations have been confirmed by numerous other workers. The second report referred to in our heading gives full and valuable details of the methods employed in Paris, Berlin, Dresden, Cologne, Brussels and Geneva for the preparation and storage of vaccine lymph. Those interested in the subject will find here full descriptions of the great advances that have been made during the last few years in the preparation of this material. Space forbids that I should cull from the report a statement of how the model vaccine establishment is throughout directed in accordance with laws laid down by the bacteriologist. I need in addition but to refer to Dr. Blaxall's experiments contained in the first report referred to. Lanoline and vaseline have been advocated by some as possessing superiority over glycerine. Dr. Blaxall demonstrates that this is very far from being the case. Making examinations of fresh vaccine lymph with glycerine, vaseline and lanoline respectively, it was found that the number of bacteria in the two latter steadily increased, whereas the bacteria in the glycerine emulsion steadily diminished. At the end of four weeks none of the agar plates made from the glycerine emulsion showed any colonies at all. At the end of six weeks the glycerine stock emulsion continued absolutely sterile, while plates from the other two were so flooded with colonies that the first plates were useless, and only upon the second plates in which there had

[1] Since this article was written I am glad to see that the British Government has at last recognised the value of Dr. Copeman's procedure and is taking steps to make the use of glycerinated lymph compulsory.

been a further great dilution of the stock were the colonies sufficiently far apart to be counted. Thus :

Glycerine.....	0	colonies per plate.
Vaseline (Plate II).....	8,000	" " "
Lanoline (Plate II).....	10,000	" " "

What is the moral to be drawn from the above observations ? It is this :

1. That the admixture of glycerine with the vaccine lymph obtained from the calf leads, under due precautions, to the destruction of all harmful micro-organisms, so that such glycerinated lymph in twenty-eight days can be used with full security—that is, is free from dangerous contamination.

2. The same can be stated of no other preparation of lymph at present known to us. Even when prepared with the greatest care, " points" are liable to be contaminated—as again is undiluted fluid vaccine lymph put up in sterilized and hermetically sealed tubes. All these forms, if tested, show abundant cultures of various bacteria, notably of forms undistinguishable from pus-producing micro-organisms ; and though in the vast majority of cases these produce no evil effects, still there is no absolute security that in a given individual the employment of one or other of these forms will not directly lead to untoward complications.

3. When we can employ uncontaminated lymph (glycerinated lymph properly kept) the employment of contaminated lymph is indefensible.

4. It is therefore the duty, not only of the profession, but also of the government, to take such steps as will lead to the compulsory employment of properly prepared glycerinated calf lymph, to the exclusion of all other forms. Thereby one possible source of danger in vaccination will be completely eradicated, leaving only the possibility of complications due not to the vaccine lymph itself, but to either the use of imperfectly sterilized instruments in the performance of the operation, or to the entrance into and growth in the inflamed area of pathogenic microbes. Either of these possible complications can be reduced to a minimum by the simple means of due care and cleanliness. *J. G. Adami.*

Reviews and Notices of Books.

The Medical News Visiting List for 1898. Weekly (dated, for 30 patients); Monthly (undated, for 120 patients per month); Perpetual (undated, for 30 patients weekly per year); and Perpetual (undated, for 60 patients weekly per year). The first three styles contain 32 pages of data and 160 pages of blanks. The 60-patient Perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, with pocket, pencil and rubber. Seal Grain Leather, $1.25. Thumb-letter Index, 25 cents extra. Philadelphia and New York: Lea Brothers & Co.

A visiting list is an indispensable convenience for the active practitioner. The *Medical News Visiting List*, opens with 32 pages of printed data of the most useful sort, including an alphabetical Table of Diseases with Approved Remedies, a Table of Doses, sections on Examination of Urine, Artificial Respiration, Incompatibles, Poisons and Antidotes, a Diagnostic Table of Eruptive Fevers, and a full-page plate showing at a glance the incisions for ligation of the various arteries, an invaluable guide in such emergencies. It is issued in four styles, adapted to any system of records and any method of keeping professional accounts, and is durably and handsomely bound in the size of a wallet for the pocket.

Clinical Methods. A guide to the practical study of Medicine. By Robert Hutchison, M.D., M.R.C.P., Demonstrator of Physiology, London Hospital Medical College, and Harry Rainy, M.A., F.R.C.P., Ed., F.R.S.E., University Tutor in Clinical Medicine, Royal Infirmary, Edinburgh. London; Cassell & Co., Limited.

This is a book which it is a pleasure to own, for in it one possesses a comprehensive, clear, and remarkably up to date guide to clinical diagnosis, which is yet compact enough to be carried in the coat pocket.

The illustrations are plentiful and excellent. Among them we notice especially a very fine collection of typical pulse tracings and some diagrams and tables illustrating the localisation of function at various levels of the spinal cord.

The coloured plates showing the different varieties of white blood corpuscles and the more common bacteria are also good.

As examples of the more recent additions to medical knowledge which receive recognition, we might mention Widal's serum test for typhoid, and the Neuron theory of the nervous system.

The examination of the heart, lungs, urine and special senses all receive due attention; also the blood, clinical bacteriology and the special examination of children.

Even those possessing other books on the same subject will find this a valuable addition to their library. W. S. M.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, October 29th, 1897.

ROBERT CRAIK, M.D., PRESIDENT, IN THE CHAIR.

Dr. Geo. Fisk, of Montreal, was elected an ordinary member.

Ulceration of the Bowel Resembling Typhoid Fever.

Dr. J. G. ADAMI showed this specimen, a report of which will be published later.

Dr. A. G. NICHOLLS stated that at the time of the autopsy Peyer's patches higher up in the ileum showed signs of healing typhoid lesions. The spleen had not been that of typhoid fever, being rather smaller than normal.

Dr. WYATT JOHNSTON thought that the ulcers were strongly suggestive of typhoid fever, especially as they were accurately in connection with lymphatic structures, They, however, showed more evidence of cicatrization than was usual, and there was an absence of pigmentation, whereas healing typhoid ulcers were usually slaty. He considered that the absence of the serum reaction was not of much moment at so late a stage. Several fatal cases had been recorded where it was absent just before death. The blood from the present case gave negative results, even in 1—2 dilutions. He thought that the nature of the disease here could only be decided from cultures. It was not unusual to find the spleen not enlarged at this stage of the disease.

Cholecystitis Enterica.

Dr. C. F. MARTIN read the report of this case. (See page 572 of the December number.)

Dr. JAMES STEWART referred to the great difficulty met with during life in making a diagnosis in this case. Thus, appendicitis, typhoid perforation, and cholecystitis were all entertained. A definite diagnosis of typhoid had been made before the patient entered the hospital, and by some the symptoms were all explained by a perforation having taken place. Others considered the case to be one of appendicitis, and the unusual seat of the pain for this condition did not entirely exclude this disease, as in some cases the appendix had been found lying quite as high up in the abdomen. The limited localization of the symptoms over the gall-bladder pointed strongly to this organ,

and caused him to decide upon cholecystitis, the absence of jaundice was, however, confusing. The fact that typhoid bacilli might be the cause of a cholecystitis was not admitted by the surgeons.

Pyopneumothorax.

Dr. W. F. HAMILTON presented a patient and demonstrated the above condition, drawing attention to the following points of interest in the case :

1. The occurrence of pneumothorax was of tuberculous origin, as bacilli had been found in the sputum and also in the purulent effusions from the pleural cavity on two occasions.

2. The case had an exceptionally chronic course, fourteen months having elapsed since it was first recognized.

3. There was strong evidence to show that the tuberculous process began in the left lung, and after pneumothorax occurred the process had not manifestly advanced.

4. The freedom from fever, chills and sweats was to be noted as rare with pus formation, while an increase in the body weight had been observed.

5. The recurrence of febrile temperature, with increased cough and expectoration, was simultaneous with signs of commencing lesion in the opposite lung.

Dr. J. B. MCCONNELL said that it was stated that ten per cent. of all cases of phthisis developed pneumothorax, accounting for nine-tenths of the cases. An interesting point about the present case was why, with such a large amonnt of pus being produced in the thorax, there had been no temperature and the patient's strength had been maintained so long.

Dr. GEORGE WILKINS referred to another instance in which a large amount of pus had been present in the thorax for considerable time without causing any elevation of temperature. The patient was a young man who came to his office complaining of a small tumour in the right side which turned out to be empyema. The only subjective symptom was shortness of breath.

Typhoid Fever without Intestinal Lesions.

Dr. A. G. NICHOLLS read a paper with the above title. (See page 9.)

Dr. WYATT JOHNSTON thought the case reported was an extremely interesting one, and pointed out that this was one of the cases where serum diagnosis had given a positive result which the post-mortem had apparently shown (until bacteriological examination was made) to be incorrect. He thought it was very important in any case where there was discrepancy between the serum test and the diagnosis to do the test quantitatively.

Dr. Jas. Stewart said that this case illustrated the great practical value of bacteriology in clinical medicine. At the outset, during life, the serum diagnosis had been the only means of determining the nature of the disease, and after death, if it had not been for the bacteriological examination made by Dr. Keenan, the real disease would have been overlooked.

Dr. Geo. Wilkins had hitherto believed that typhoid fever always required the presence of an ulcerative condition of the intestines. Although the lymphatic tissue was the usual channel of entry of the bacilli, he thought that there must be other sources as well, otherwise it would be difficult to explain the presence of bacilli in the urine in the cases cited, where the lymph glands were not involved.

Dr. J. B. McConnell thought that one was not warranted in making a new type of "typhoid without intestinal lesions," as even in the case reported, there were slight lesions in the lymphatics. The idea that it was possible to have such slight intestinal involvement enabled us to take a broader view of the disease and cease to describe as complications those nephritic, pulmonary, cerebral, and other varieties occasionally met with, but rather to regard the affection as one in which the specific cause might exert its influence in various parts of the body and produce its typical manifestations from other points than the intestinal canal.

Dr. Nicholls, in reply to Dr. Wilkins, said that he did not mean to imply that the bacilli were confined to the lymphatic system. They eventually did get into the blood and thence to all parts of the body. Dr. Adami had suggested that the lymphatic system acted as a sieve and thus accounted for the relative infrequency in which they were found in the blood.

In reply to Dr. McConnell's criticism on his choice of a title, he pointed out that the intestinal lesion had been so slight that had it not been looked for specially it would not have been detected during an ordinary examination. The hyperplasia of the Peyer's patches affected was so extremely slight that the condition did not suggest typhoid fever.

Stated Meeting, November 12th, 1897.

Robert Craik, M.D., President, in the Chair.

Excision of the Tongue.

Dr. G. E. Armstrong exhibited a patient operated upon for cancer of the tongue and gave the following report:

I have recently had in the wards of the Montreal General Hospital

an unusual number of cases of cancer of the tongue. There has been a marked difference in the location of the cancer. In this man the disease began on the right border of the tongue, well back, opposite to the molar teeth. He first entered the Montreal General Hospital in June last. The growth was then small and limited to the border of the tongue. A small piece was snipped off, and Dr. Wyatt Johnston reported it to be an epithelioma. The man declined to have any operation performed, saying that he preferred to die with his tongue in his mouth. He returned to the hospital in the beginning of October. Infiltration had taken place rapidly during the interval and in a downward direction. The whole floor of the mouth was involved. He could hardly speak so that he could be understood, and he said that the constant pain day and night was so severe that he could get but little rest, and begged to have the tongue removed on account of the pain. The deep involvement of the floor of the mouth and the presence of enlarged glands in the submaxillary region determined me to remove the tongue by Kocher's method. I performed the tracheotomy and excised the tongue at the same operation, and I saw no reason to regret doing so. The lateral incision of Kocher enables one to remove enlarged lymphatic glands and the submaxillary gland. The mouth is then entered laterally just beneath the lower jaw. The patient being tracheotomized, the pharynx can be plugged with a sponge and blood be prevented from entering the air passages. The access to the floor of the mouth is good, and during convalescence the patient breathes a pure air through the tracheotomy tube, and thus the danger of aspirative pneumonia is lessened. I believe this method of removing the tongue to be an admirable one, when the floor of the mouth is deeply infiltrated and the glands at the side of the neck enlarged.

In another case upon which I have just operated the disease was seated just at the bottom of the frænum. It was placed so low just below the border of the jaw, that it was difficult to remove a piece for the microscope. In this case I did the old operation, originally devised by Roux, and generally known in England as Syme's. That is a median incision through the lower jaw. This method enabled me to get well at the seat of the trouble, and I think I effected a more thorough and wide removal of the diseased area in this case by a Syme's operation than I could have done by any other.

I think that most surgeons consider Whitehead's operation, with or without preliminary ligature of the lingual arteries, as the operation for removal of cancerous disease of the protruding portion of the tongue, but I am satisfied that it is unwise to allow oneself to be

limited to one operation. Disease chiefly seated in other than the protruding tongue may sometimes be more thoroughly extirpated by other methods.

But in the future we must aim at arriving at a correct diagnosis earlier in the course of the disease, and by early and complete extirpation strive to remove the whole of the infected area, which all pathologists agree is at first a local disease, and thus prevent recurrence.

Death by Electricity.

Dr. Wyatt Johnston reported five cases, in three of which death was due to the passage of the electrical current through the body. In one of the others a motor man, having climbed to the top of his car to look after the trolley wire, received a shock which caused him to fall to the ground. He picked himself up and was sent home, but died a few hours later from what the autopsy showed to be a fracture of the base of the skull, with intracranial hæmorrhage. The medico-legal diagnosis was very easy in this instance, but was less so in the second case, where a line-man working in wet weather on the cross bars of a telephone pole received a shock from an electric light current which had fouled a telephone wire. He was seen to fall to the ground and died a few minutes later. An autopsy by Dr. Villeneuve showed the cause of death to be a hæmorrhage at the base of the skull, some of the blood having been inspirated into the lungs and finer bronchi. Examination made independently by both himself and Dr. Villeneuve showed no signs of burning on any part of the body. The company were held responsible, although the fact that death was not due to the shock was evidenced from the time that must have elapsed to allow the blood to be drawn into the lungs.

Case three (communicated by Dr. Villeneuve) was that of a man who picked up one end of a broken live wire to show that there was no danger in so doing. The marks of the burning were present on the hands and ecchymoses on the surface of the body. No autopsy.

In case four a man made a connection between two wires by stepping on one while the other was touching his arm. The leather in the sole of his boot was burnt and his jersey charred, but the burns upon the skin were of very slight degree—an interesting point.

In case five a man received the fatal shock from a badly insulated wire while sitting between two other men upon the cross bar of an electric light pole. Some minutes elapsed before the body was taken down, and during this time the current was passing. The burns here also were extremely silight, in spite of the long exposure, and no second point of contact could be found. A small morsel of a clay

pipe which the man held between his teeth was inspirated into the smaller bronchi, and the blood at the autopsy was found fluid, and remained so for one week. This condition was due to the continuous passage of the current, other causes of absence of clotting having been examined for and excluded.

It was not generally known that not only the fatal shock but also the typical changes could occur with such slight lesions through contact with a live wire.

Dr. G. P. GIRDWOOD related a case of lightning stroke which had come under his observation and in which very extensive burning of a slight degree had occurred without a fatal result. He pointed out that the effect of the electric fluid upon the body depended both upon the suddenness of the shock and the duration of the current, the latter factor producing the electrolytic action upon the fluids of the body.

Dr. F. W. CAMPBELL referred to a case where a man, after exposure to a very severe thunder storm, but without being actually struck by the lightning, had gradually lost every hair on his body. Other instances of baldness produced under similar conditions were also on record.

Experiences of Two Hundred and Forty-eight Cases of Abdominal Sections.

Dr. LAPTHORN SMITH read a paper with the above title. The cases extended over a period of eight years and showed a total mortality of $6\frac{4}{5}$ per cent. varying between 17 per cent. in 92, to $3\frac{1}{3}$ per cent. in 96.

The cases included the removal of two large tumours of the kidney, eleven large ovarian tumours with two deaths, fourteen abdominal hysterectomies with four deaths, nine ventral and umbilical hernias with no deaths and sixty-two double pus tubes with five deaths.

He alluded to the many cases in which it had been impossible to obtain the patients' consent to an operation, although he could confidently say they would be benefitted thereby; of such were cases of diseased tubes suffering from recurring attacks of pelvic peritonitis and incurring the risk of having recto or vaginal fistula formed with perhaps fatal results. In cirrhotic ovaries, operation was not proposed until a year of local treatment had failed to obtain relief.

With regard to the conservative treatment of diseased ovaries, *i. e.* cutting out cysts without excision of the organ, Dr. Smith stated that his experience led him to the conclusion that it was a mistake.

Among the interesting cases mentioned was one of obstruction of the bowels occurring ten days after removal of the appendages. At the second operation, performed nine hours after fæcal vomiting had set in, the bowel was found kinked and adherent to the abdominal wall, and on being freed a perfect recovery resulted.

Seven cases of tubal pregnancy, in four of which a correct diagnosis had been made, were reported. All recoveries. The particulars have been already published.

Hernia following operation had been unknown during the last three or four years; this he attributed to the fact that the sutures were left in place for one month. Since using the Trendelenburg posture, drainage had been practically discarded altogether; the abdomen was flushed out with a large quantity of salt solution, and from one to eight quarts of it left in the abdomen. This procedure served to satisfy thirst, prevent adhesions, wash out the kidneys and strengthen the pulse.

Dr. F. A. Lockhart thought that Dr. Smith was to be congratulated on his success with his cases of ectopic gestation. He felt that the question of conservative surgery was a trying one, whether it arose concerning the surgery of the pelvis or that of other parts of the body. It was always a difficult matter to decide whether or not one ovary was to be left, but thought this should always be done when it was healthy. Even if after operation the remaining organ gave trouble, this was often to be accounted for by its increased activity, causing it to become swollen and tender, and rest and local treatment often effected a cure.

Stated Meeting, November 26th, 1897.

Robert Craik, M.D., President in the Chair

Dr. R. A. Kerry and Dr. D. D. McTaggart, were elected ordinary members.

Lichen Ruber.

Dr. F. J. Shepherd exhibited a patient, a man aged 35, who had suffered from lichen ruber for seven years. Coincident with the appearance of this disease he became paralysed in the left side, especially was the paralysis marked in the left arm. The patient's appearance was very characteristic; the general redness of the surface, with some healthy patches of skin on abdomen and back; the loss of hair of head, eye-brows, eye-lashes, pubic hair, and axillary hair; the ichthyotic appearance of the skin in parts and in other places such as legs, elbows, buttocks, the acuminate condition of the eruption about the hair follicles and the plugging of the follicles with dried epidermis; the absence of any tendency to form vesicles or pustules.

This disease is sometimes called "pityriasis rubra pilaris," and there has been much discussion about it, it having been confounded with pityriasis rubra, lichen planus, &c. It was first described by Duvergie,

then more fully by Hebra, who included with it the lichen planus of Erasmus Wilson, which inclusion has caused much confusion.

The prognosis is always grave, no case of true lichen ruber having had a favourable termination. Treatment is of but little use. Cod liver oil and local washings, and the application of unguents is all that can be done. Arsenic is only of use in the early stages.

The paralysis existing in this patient, Dr. Shepherd thought, was an accidental complication and not the result of the disease.

Dr. W. F. Hamilton, a few months since, had had under his care an old gentleman of sixty years of age suffering from Bright's disease, whose body from head to heels was covered with an eruption presenting the following characteristics : Very deep redness, desquamation, areas of a peculiar coppery colour, evidently staining due to former involvement of the part, enlargement of the glands in the neck and axilla, and extensive papular areas which seemed due to local irritation from scratching. Dr. Hamilton had been puzzled between lichen ruber and pityriasis rubra. The disease had lasted twenty years and involved every part except the face and the hands. Finally the case was looked upon as one of pityriasis rubra with nephritis. The patient died a few weeks ago from Bright's disease.

Removal of Foreign Body from the Cheek.

Dr. J. M. Elder exhibited a steel pen which he had removed from the cheek of a young man. The history, in brief, was as follows :

The patient, aged twenty-four, consulted him for a swelling on the left cheek ; and, on examination, a fluctuating tumour was found high up under the zygoma at the anterior border of the masseter muscle. Seventeen years previously, while running with a pen in his hand, the boy had fallen and the penholder had entered his left cheek in an upward direction opposite the angle of the mouth. The penholder was withdrawn, and as there was no nib on it none was supposed to have been there at the time of the accident. On opening through the buccal mucous membrane, some fluid and pus escaped, and Dr Elder had great difficulty in removing small portions of the nib that were caught in the forceps. The wound soon healed, but two weeks later a fluctuating abscess formed opposite the old scar on the skin. This was incised and by means of a fenestrated Volkman's spoon, the pen, as shown, was turned round, the point gripped with the forceps, and drawn out without difficulty. The interesting point of the case was the length of time a steel object could remain in the tissues without being very much corroded, and without causing any symptoms.

Dr. Rollo Campbell referred to a case he had seen in the London Hospital of a somewhat similar nature. A patient shortly after being

sent in was found to have some interference with the venous return through the back of the orbit and died that night with symptoms of pressure on the brain. At the autopsy, a portion of a penholder was found, the supposition being that it had entered through the nose.

Diabetes Mellitus.

Dr. RIDLEY MACKENZIE reported this case. (See page 27.)

Stated Meeting, December 10th, 1897.

ROBERT CRAIK, M.D., PRESIDENT, IN THE CHAIR.

Drs. W. M. F. Nelson, M. Lauterman and G. D. Robins were elected ordinary members.

Intraligamentous Myoma.

Dr. WM. GARDNER reported this case and exhibited the tumour which he had removed as follows:

Madame V., æt 32, married nine years, nullipara; was admitted to the gynæcological service of the Royal Victoria Hospital on November 6th, 1897, complaining of abdominal pain and enlargement, profuse and painful menstruation, and difficult and painful micturition and defæcation.

Soon after her marriage the patient noticed a lump of the size of an orange in the hypogastrium. There was progressive enlargement for two years subsequently, when a surgeon of another city operated, removing a part of the tumour. The same surgeon again operated two years later, but with only partial success.

On examination the abdomen was enlarged equal to a six months' pregnancy by an uneven, very firm, almost hard, fixed mass. Vaginal palpation revealed the pelvic cavity completely filled almost to the lower outlet by the tumour. The examining finger could be passed upwards only close to posterior surface of the pubes, but could not be made to reach the cervix uteri or fundus of the vagina. The operation was exceedingly difficult, tedious and long, involving, as it did, a most extensive enucleation, during which important blood-vessels and the left ureter must have been in imminent danger. The position of the uterus and bladder pushed up into the abdominal cavity, and to the extreme right of the pelvic brim, must have involved immense stretching of this duct, and a very close relation to the tumour, in a furrow of which it might have lain, as so often observed in similar cases. These dangers were, however, averted.

The altered relations of the peritoneum, by reason of the situation, size and direction of the tumour, were interesting. The anterior lamina of the broad ligament was raised so that on the left side the

peritoneum was separated from the anterior abdominal wall to the extent of at least eight inches, while behind the tumour had separated the layers of the meso-colon of the sigmoid flexure and lay closely in contact with it.

The operation was completed by amputation of the uterus at the supra-vaginal cervix, and the packing of the enormous cavity, now, however, much contracted, by iodoform gauze. The considerable loss of blood and long duration of the operation brought the patient before its close to a very critical condition. By the use of sub-mammary transfusion of normal salt solution and hypodermics of strychnia, she was kept alive and got to bed. Reaction was not fully established till six hours later.

Convalescence has been retarded by a severe attack of bronchial catarrh and some suppuration of the cavity whence the tumour was enucleated, but there is no reason to doubt ultimate complete recovery. The weight of the tumour was six pounds.

Dr. F. J. SHEPHERD asked, regarding the enucleation of these large tumours, whether it was ever done rapidly, or always slowly, as in the present case, ligating the vessels as one went along. From his experience with tumours of the thyroid he had come to the conclusion that the slow method was always the best, the rapid being often disastrous

Case of Ruptured Tubal Pregnancy—Laparotomy—Recovery.

Dr. G. T. ROSS said that he had visited the patient (on 28th November) and her history in brief was as follows: After the last *accouchement*, ten years previously, menstruation had been regular until November of the present year, when about a week after the ordinary period she had had another bloody discharge, lasting seven days and, following that, more or less nausea and vomiting until, on November 26th, she had unusually severe pain on the right side for twenty-four hours with chills and fever. The family physician at the last named date called in a consultant, when pregnancy was diagnosed and a favourable prognosis given. Three days later Dr. Ross was asked to see her, and the following condition was present:

Patient was found with a temperature of 101½, and pulse of 122, great prostration, blanched face and anxious countenance. Nausea and vomiting were present.. There was great tenderness over the abdomen extending up to the epigastric region, but palpation gave no evidence of any special resistance or any tumour. *Per vaginam*, the uterus was not found enlarged, but there was specially great tenderness on the right side of this organ. Although there were few positive symptoms pointing to extra-uterine fœtation, he regarded the case as such, to the exclusion of other conditions, considering that rupture of

a tubo-ovarian gestation would account for most of the symptoms. On his advice the patient was removed to the hospital and a laparotomy performed.

Dr. LAPTHORN SMITH reported the operation as follows : The patient, whose history has been already given by Dr. Smith, was a Jewish woman, Mrs. K., 28 years of age. The operation took place just a week ago to-day, and there is hardly any doubt but that she will make a good recovery.

On examining her I found her with a very weak and rapid pulse, slightly elevated temperature and distended abdomen. On examination the uterus was found normal in size and position, and nothing could be made out the matter with the tubes and ovaries. It was thought advisable to delay operating a little until the bowels could be moved and the pulse improved. This proved unwise, however, for her pulse grew worse, until it reached 150, and in twenty-four hours she was vomiting worse than ever, some of the ejecta appearing decidedly fæcal. This led me to suspect the possibility of obstruction of the bowel, and made me more anxious still to operate at once and at all hazards, although she refused to submit to operation until the last minute. On opening the abdomen black blood gushed forth, and on introducing the hand large clots could be felt filling the cavity. The right tube, from which the blood was pouring, was seized and tied and removed with the ovary. The fœtus, about an inch and a half long, was found among the clots. The fœtus and placenta had been expelled through the tear in the tube, the distended and torn tube being entirely empty. The quantity of clots and fluid blood removed was estimated by my assistants at between three and four quarts. After this had been removed a gallon of hot salt solution was poured into the abdomen and left there. Besides that she received three quarts of salt solution by enema the first day, which she retained, and two quarts the second day, by the end of which time her pulse, which was 150 before the operation, had fallen to 80. I think we have reason to be proud of our profession when we see a general practitioner of it diagnosing accurately and at once such an obscure case. Unless this diagnosis had been made and acted upon, this woman was condemned to certain death.

This is my ninth case of laparotomy for tubal pregnancy, and so far all the patients have recovered.

I would like to call attention to the value once more demonstrated in this case of artificial serum in the abdomen and administered by enema. The result on the patient's pulse was marvellous and unmistakable.

Intestinal Resection in a Child Aged Four.

Dr. E. A. Robertson read the report of this case. (See page 31.)

Sir Wm. Hingston said he had nothing to add to the report of the case, which was very clearly given; but had a suggestion to make in the way of a correction of terms. He had always objected to the term "exploratory incision," as he did not consider that an operation for the purpose of establishing diagnosis was justifiable. In this case t was not an exploration; the diagnosis was made beforehand, and not till then did they proceed to perform the operation. Although death had taken place, it did not alter his opinion that the operation was a justifiable one, and the only one possible under the circumstances.

Dr. F. J. Shepherd was much interested in the case, but must take exception to some points raised by Dr. Robertson. He did not believe in fæcal accumulation as a cause of tumour; when there was a fæcal accumulation it was always produced by a stricture either malignant or otherwise. No operator had ever seen such a condition simulating tumour, and he was not aware that any pathologist had ever seen it *post-mortem*. Another point was the mortality statistics presented by Dr. Robertson: in abdominal surgery old statistics were useless, or worse, they were misleading; methods had so altered in the last ten years that one should not go back beyond that period to obtain a basis for estimating mortality. He did not agree with Sir William Hingston concerning the uselessness of exploratory operations; he thought in cases like this it was impossible to make a positive diagnosis, and that an exploratory operation was justifiable. He would like to ask how Sir William, in this case, made a positive diagnosis of mesenteric tumour. He would like to draw Dr. Robertson's attention to a paper on Solid Mesenteric Tumours in the July number of the Annals of Surgery, where 57 cases are collected, also to the speaker's own case which was shown to this Society last winter.

Some Recent Gall-Stone Cases.

Dr. James Bell read a paper with this title. (See page 1.)

Dr. F. J. Shepherd considered cholecystotomy one of the most successful operations in modern surgery. Incision of the common duct was not to be classed in the same category, as it was a much more serious operation. He was surprised that among such a large number of cases there was no case of malignant disease. The frequency with which gall-stones existed in the female gall-bladder was not sufficiently recognized. Dr. Shepherd thought it was due to the constriction of the abdomen which caused obstruction of the cystic duct. In a case last summer, the speaker had cut down and come upon a

distended gall-bladder which simulated appendicitis. The case recovered.

Dr. Shepherd also asked whether, after incision of the common duct, Dr. Bell preferred to sew it up or simply to pack it around with gauze, leaving in a drainage-tube. In a recent article, Mr. Jordan Lloyd mentions that he cut down on the ureter for impacted stone ; after first making an abdominal incision to determine the place of the stone, he opens into the ureter outside the peritoneum and does not close the incision up again : no leakage of urine took place from the incision in the duct.

Dr. W. F. Hamilton referred to the following case of cholelithiasis as of interest. A young French-Canadian, a painter, came to the hospital complaining of severe pain in the region of the liver off and on for five to seven years. At that time there was a slight icteroid tinge to the conjunctiva ; the urine contained bile, and there was tenderness over the gall-bladder. The temperature was slightly raised. The speaker suspected catarrhal duodenitis, and expected catarrhal jaundice to develope. The following morning, however, on examining the stools, quite a large gall-stone was found. The surface of the stone suggested the presence of others. He left the hospital in a few days fully relieved.

Dr. G. A. Brown drew attention to the fact that some days might elapse after the stone had left the duct before it appeared in the stools. He related one in which three days had passed before it was found in the stools.

Dr. E. A. Robertson thought the statement that the stone was sometimes passed without causing any symptoms was most improbable.

Dr. Bell in reply, said that two of the cases had been sent to him as cases of appendicitis, and that the physical signs and symptoms had given good ground for this diagnosis. He always sutured the gall-bladder to the peritoneum only, and always closed the incision in the ducts by suture, using fine silk as suture material. He also introduced a drainage tube and packed off the space with gauze, but did not feel safe in trusting to these alone, where it was possible, he preferred to close the incision by suture. He did not think the incision in the ureter, as mentioned by Mr. Jordan Lloyd, for the removal of ureteral calculi, was quite a parallel case, as there was always a great gush of bile when the stone was extracted from the common duct. Besides, the ureteral wound was entraperitoneal. He was quite sure that gall-stones often existed for a very long time without giving rise to any symptoms, and referred to case IX. in this series as evidence that a number of stones had existed for a long time in the gall-bladder, and

only gave rise to symptoms when disturbed by an accident. One case had had high runs of fever, and three of the cases where cholecystitis existed, (besides the typhoid case) had had moderate fever. He had not discussed the prevention of gall-stones, as the cases reported were those in which the stones, not only already existed, but had given rise to serious symptoms. He was quite sure, however, that the size and number of the stones found in a given case was not determined by the age or sex of the patient. In general terms, he thought it might be stated, that stagnation of the bile in the gall-bladder was an important factor in the causation of gall-stones, and that constriction of the waist as seen in women, and certain positions, such as that assumed by a man sitting at a desk, contributed to this end by making it more difficult for the gall-bladder to empty itself.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXVII. JANUARY, 1898. No. 1.

THE VICTORIAN ORDER OF NURSES.

In Montreal and several other places the arrangements for the early inception of the Victorian Order of Nurses have reached an advanced stage, so that before many weeks will have passed this beneficent scheme will have become an accomplished fact. There can be no doubt that there are in many places crying needs for nurses, At present the nurse's work is practically confined to the well-to-do in the cities and larger towns. In the villages and country places, and among the poor of the cities, the sick have to be nursed by their own relatives or friends. Every physician practising in the country knows what it is to attend a trying case of illness without a nurse to help him, but how few country practitioners have experienced the relief that comes when an accomplished nurse is present to assist him in his work and to see that his instructions are carried out. Any medical man who has treated a case of typhoid fever in the country without the aid of a nurse, and who has had a similar duty to perform in a city, but aided with a nurse, knows the great difference it makes, not only to the patient, but to himself as well. The first to find the benefit of the work of the new organization will be the doctor in out-of-the-way places and his patients. In some places there has been among a few medical men a misunderstanding of the aims of the Victorian Order, but as the objects of it become better understood we will hear less and less of any opposition to it and more and more of its usefulness. Nearly every measure of usefulness that we consider to-day essential to the well-being of our common humanity has had its origin and progress opposed by men, acting, no doubt, in the best of faith, but unfortunately possessed with a very limited field of vision.

How coldly Florence Nightingale was at first receivd by the military and medical men of the Crimea is a matter of history. All who

were in practice when the present system of nursing was first introduced into our hospitals know that even many medical men were decidedly opposed to it. It would be difficult to meet with an hospital physician at the present time who would recommend a return to the old system of nursing.

The Victorian Order of Nurses is founded on the system of district nursing in England and Scotland, instituted some ten years ago, and which has proved to be an eminently practical and successful method of enabling all members of a community to avail themselves of the services of good nurses when sickness enters their homes.

We have had experience of the working of this system in some of the country districts in the Highlands of Scotland, and know that there is no class of the community who think more highly of it than the medical practitioners. What has proved so successful there will through time prove equally successful here.

MEDICAL LIBRARY OF THE MEDICAL COLLEGE, McGILL UNIVERSITY.

Donations to the Library from June 2nd to November 30th.

To the following authors the Library is indebted for copies of their works :

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Sir Dyce Duckworth, M.D,, LL.D.—The Sequels of Disease, 1896.

Samuel Fenwick, M.D., F.R.C.P., and W. S. Fenwick. M.D., M.R.C.P.—The Student's Guide to Medical Diagnosis, 1897.

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The Library is also indebted to the following contributors :

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" " College of Physicians, Vol. 18, 1896.

" " Colorado State Medical Society, 1896.

" " Clinical Society of London, 1897.

" " Medical Society of the State of New York, 1897.

" " Pathological Society, London, 1896.

" " Royal Academy of Ireland, Vol. 14, 1896.

Dr. Webster—Proceedings of the Royal Society of Edinburgh, 1896-7.

A handsome reading desk has also been presented to the Library by Professor Shepherd.

COMPLIMENTARY SUPPER TO DR. W. H. DRUMMOND, AUTHOR OF "THE HABITANT."

On the evening of December 23rd, Dr W. H. Drummond was entertained at supper in the St. James' Club by the following medical friends: Drs. Armstrong, James Bell, Birkett, A. A. Browne, K. Cameron, F. W. Campbell, G. G. Campbell, Craik, Elder, England, Evans, Finley, W. Gardner, Garrow, Girdwood, W. D. Hamilton, W. F. Hamilton, Sir W. Hingston, J. A. Hutchison, Lachapelle, Lockhart, McCallum, McCarthy, McConnell, Tait McKenzie, McPhail, Perrigo, Shepherd, Grant Stewart, J. Stewart, Webster, Wilkins, C. W. Wilson.

The supper was decided upon only two or three days beforehand and no effort was made to organise a large and formal gathering. Had such a plan been attempted there would have been no difficulty in getting together a very much larger body of Dr. Drummond's medical brethren, who would have been glad to do honour to the author of "The Habitant."

The Chair was occupied by Sir William Hingston, who presided with his customary grace and dignity, his remarks being at all times characterised by their fitness and felicitousness. After the toast of "The Queen" had been drank, Sir William proposed "Our Guest" in a very happy speech, expressing the genuine congratulations of those present on Dr. Drummond's literary venture, with the hope that it might be only the precursor of a long series of successes.

Dr. Drummond replied in the following words:

"Mr. Chairman and Gentlemen, or if you will permit me to use the term inclusively, *friends*, I am naturally very proud, and very, very grateful for the position in which I find myself placed tonight, for in the wildest flights of imagination the diaphanous casement of my brain (as dear old Father Prout puts it) had never, I assure you, been penetrated by the thought that some day, "Some day," or rather, some evening, my beloved *confrères*, the medical men of Montreal, would extend to me the honour of a dinner—and when the news was gently conveyed to me the other day by our genial friend, Dr. Armstrong, it was as unexpected as undeserved. However, when a committee of physicians and surgeons, such as the present one, unanimously decide upon the line of treatment in any particular case, what can the wretched victim do but submit quietly to the anæsthetic, and let them "Fire away, Flanagan."

But seriously, Mr. Chairman and Gentlemen, Why this special act of favour? Was it a recognition of the fact that my attempt to pro-

vide for our country a literature purely "Canayen" in character, had met with a partial degree of success.

It could not have been for any other reason. My name will probably never be found in medical text-books, attached for instance to some great medical or surgical discovery, but in conjunction with my good friend, Dr. Charlie Wilson, perhaps for a few years there may linger in the minds of those present to-night, memories (not altogether unpleasant I hope) of the Wilson-Drummond enunciation: for, gentlemen, I have no hesitation in saying that, so far at least as *you* are concerned, to Dr. Wilson belongs the major part of the *discovery*. For from the very first moment that the Doctor left his native fastnesses of Buckingham, P.Q., for, possibly, the more congenial atmosphere of Montreal, he patiently experimented and demonstrated, largely before medical audiences, until now the Wilson-Drummond enunciatory *rôle* is apparently accepted by some of the most distinguished men in the profession.

> "There was a Duke of Buckingham, who never did a thing
> But strut around the court, and keep the lasses on a string,
> I believe His Excellenza was perhaps a trifle gay,
> But the *present* Duke of Buckingham isn't built that way."

No, gentlemen. Doctor Wilson was the first to recognise the premonitory symptoms of the hitherto unknown Canadian disease. What did he do? Being of course a firm believer in the science of inoculation, he at once proceeded to infuse, cautiously perhaps at first, little by little, virus, supplied *not* from the laboratory of Merck, but from the Wilson-Drummond laboratory, into the systems of those who would consent to the operation, the Doctor, naturally, hoping by this means to stay the threatened march of the disease. Medical men are ever, in the interests of science, among the first to risk experiments, hazardous, not only to life, but also to reason, and many underwent the painful ordeal. The disease, however, continued to spread; the devoted Doctor laboured assiduously and the amount, especially of night work, which he was compelled to undergo, threatened seriously to undermine his health.

New centres of contagion sprang up, and the disease, which at first was purely *endemic*, at last became *epidemic*, and the unfortunate enthusiast of inoculation was reduced to despair.

Finally, one never-to-be-forgotten evening, while the Doctor and myself were closeted together in the sacred recesses of my most private boudoir (garnished with the usual accompaniments) he, my friend, Dr. Wilson, broke the Sabbath stillness of the surrounding air by exclaiming, "Billy, for God's sake what is to be done? You will have to write a text-book, a kind of *vade mecum*, paying particular

attention to the disease which I, alas! have so vainly endeavoured to combat. Then everyone can have the disease all to themselves, and *stick to it.*"

And this, gentlemen, is the story of "The Habitant."

In the analysis of everything that is human, the medical man is indeed a *specialist*; therefore, in if painting types, in delineating human weaknesses, passions, and foibles, I have gained *your* applause; I am more than satisfied that my work has at least been *fairly* well done."

After Dr. Drummond's speech, a very pleasant time was spent, contributions in the shape of song, speech or story being furnished by each one present. It is impossible to refer to these in detail, yet it will not be invidious to single out two or three for special mention. Dr. Wilson's recitatious of selections from "The Habitant" were a great treat. They were rendered in a most sympathetic spirit and with rare artistic finish. There is no doubt, as the Chairman stated, that a considerable proportion of the interest which has been taken in Dr. Drummond's poems, in Montreal at least, has resulted from Dr. Wilson's masterly presentation of them during the past few years.

Dr. Drummond's reading for the first time of a new poem, entitled "*Phil-O-Rum's Canoe,*" was listened to with keen interest.

Another feature of the evening was Dr. Craik's closing speech, which focused the attention of all present. In a few well-chosen sentences, the Dean spoke weighty words of wisdom regarding the importance of literary studies to the medical man, who, too often, owing to the pressure of his work, allowed his mind to be cramped within the purely professional limits of his life. He urged upon his hearers the value of continual attention to "Belles Lettres," not merely as a pleasant recreation in itself, but also as a means of opening new avenues of interest, of keeping the mind in a sympathetic attitude towards the whole world of thought—in a word, of enabling them to attain the highest ideal of the cultured physician.

We congratulate Dr. Drummond on the success of the supper given in his honour; still more on the triumphal progress which his book has made.

We doubt if any poet has ever known ten thousand copies of his first volume to be bought by a ravenous public within a few weeks of publication. Yet this has been Dr. Drummond's good fortune.

We do not know what his future literary ventures may be, but we feel sure that they will be worthy of the man,—worthy of his first success. Modern literature has too many examples of men who, having achieved fame by their early strenuous labours, thereafter pour forth their drivelling, slovenly stuff upon the credulous public.

It is some satisfaction, however, to know that such persons sooner or later find their Gehenna, though too often with the spoils of unrighteous mammon, which they have gathered in their downward course.

We trust also that Dr. Drummond, having proved himself a master in delineating various types of French-Canadian character in the well-known patois of the *habitant*, will soon cultivate the muse in pure rich mother English.

Dr. Drummond's work is an evidence of his exquisite cultured poetic faculty.

It is not too much to expect that, following Kipling's example, in having first achieved a reputation as a truthful and sympathetic painter of the scenes and types familiar to him from his early days, he may wander far afield in fancy's realms, achieving for himself a splendid reputation as one of the great imperial singers of our race.

ANNUAL DINNER OF THE UNDERGRADUATES OF THE FACULTY OF MEDICINE OF McGILL UNIVERSITY.

The Undergraduates of the Medical Faculty of McGill held their annual dinner at the Windsor Hotel, on the evening of December 16th, 1897. The Faculty was well represented, and among the guests were Principal Peterson, Dean Walton, Sir James Grant, Sir William Hingston and others.

After doing justice to the sumptuous repast furnished by the management of the Windsor, the President of the dinner, Mr. H. J. Schwartz, '98, in an appropriate speech, proposed the health of "The Queen," and it was responded to in the usual manner by "God Save the Queen," and three hearty cheers, such as only medical students can give. Mr. G. A. Fagan, B.A., '98, proposed "Old McGill," and Principal Peterson responded for the University. "The Dean and Professors" was proposed by Mr. B. Francis, '98, and Dean Craik and Professor Buller replied on behalf of the Faculty. "Sister Universities," by Mr. H. Hill, '00, called forth a response from representatives of 'Varsity, Queen's, Trinity, Dalhousie, Bishops, and Laval Universities.

Sir James Grant, in rising to respond for Ottawa and Queen's, alluded to the fact that he was able to represent more than one University, and touchingly referred to "Old McGill," his Alma Mater. He felt that this was a fitting occasion on which to glance at the wonderful progress of medical science during the "Victorian Era." The year Her Majesty ascended the throne marked the advent of the

treatment of the insane without physical restraint. A second great advance was the adoption of the principles of preventive medicine, and to-day no university course was considered complete without a chair of Sanitary Science. Following these, the speaker noted the introduction of chloroform by Dr. afterwards Sir James Simpson, in 1846, the practical abandonment of blood-letting, the advent of nitro-glycerine, chloral hydrate, serum-therapeutics, and the advances in abdominal surgery. Sir James also referred to the improved methods of diagnosis of disease, the most recent of which was the application of the X-rays to that purpose.

The toast of "Medicine '98" was proposed by Mr. W. McKechnie '99, and responded to by Mr. A. M. Smith, '98, in a neat speech. Dr. Wyatt Johnston proposed the "Freshmen," and Mr. W. Little, '01, replied.

During the evening Messrs. Scanlon '98, Harvey '98 McKay '01, and Lamb '01, rendered solos, the students joining in the choruses.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Proceedings of the Pathological Society of Philadelphia, Oct. 28th, 1897. Vol. I., No. 1.

Primary Sarcoma of the Iris. A statistical study, with the report of an additional case in which the growth was successfully removed by iridectomy. By Clarence A. Veasey. A.M., M.D., Philadelphia. Reprint from Annals of Ophthalmology, Vol. VI., No. 4, Oct., 1897.

Proceedings of the Society for the Study of Inebriety. H. K. Lewis, London.

Diseases of the Eye. By Edward Nettleship, F.R.C.S. Lea Bros. & Co., Philadelphia, 1897.

Mediterranean, Malta or Undulant Fever. By M. Louis Hughes. MacMillan & Co., London, 1897.

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXVII. FEBRUARY, 1898. No. 1.

Original Communications.

THE SYNTHESIS OF ALKALOIDS.

BY

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Demonstrator of Practical Chemistry, McGill University.

The synthetical production of alkaloids has been a task which numberless chemists have set themselves to perform since the discovery of morphine, ninety years ago, and although in the matter of actual success in comparison with the amount of work that has been done, not much has been accomplished, yet the progress which has been made in the last two decades has been so great, that it is by no means without the range of probability that in the next ten years, many of those alkaloids which are to-day only to be obtained from plants will be the products of the laboratory.

Problems, such as these, which are of almost insurmountable complexity have not only the purely scientific aspect to induce work upon them, but also the enormous commercial importance which is attached to them, and one has only to remember the indigo synthesis of A. v. Baeyer from a nitro cinnamic acid to understand how a research undertaken to solve a question of constitution will revolutionize an industry which has, for centuries almost, been the exclusive producer of a necessary domestic compound.

In the first part of this century large numbers of plants were investigated and as a result a more than an equivalent number of alkaloids was found. It was only when the observers came to investigate the constitution, that they realised the enormous difficulties with which they had to contend.

The first step which threw some light on the subject was their behaviour on distillation; many gave pyridin or a compound allied to it, and it was hence believed that they were basic bodies which

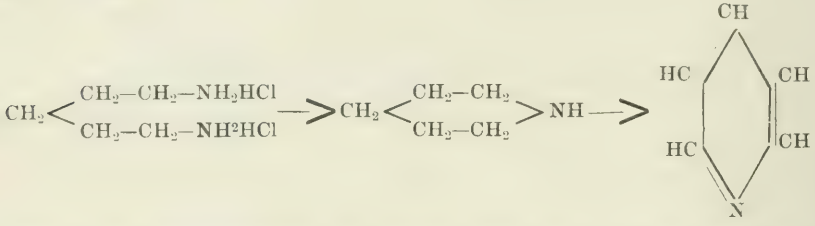
contained a pyridin nucleus. Such a definition would shut out such very important compounds as caffein and theobromin, and it is perhaps best, simply to view them as plant derivatives containing nitrogen, in which the nitrogen is contained in a cyclic atom complex.

As pyridin is the compound from which most of the alkaloids are derived, it may be well to speak of it somewhat in detail.

It consists, according to Körner, whose view has been generally accepted, of a benzene ring in which a methin group has been replaced by a trivalent nitrogen atom.

Piperidin $C_5 H_{11} N$ bears a close relation to pyridin and following up the researches of Cahours, Hofmann, by the action of bromine on the former compound, converted it into a substance having the empirical formula, $C_5 H_2 NO Br_2$, which he held to be a brominated pyridin derivative. That there was a close connection between these two substances was shown by the oxidation of piperidin to pyridin by means of sulphuric acid.

The full synthesis of piperidin was accomplished by Ladenburg by the dry distillation of penta menthylendiamin hydrochloride. The relation between these three substances may be shown by the following scheme:



The next synthesis which was effected was that of coniin, the alkaloids of conium maculatum. It was of interest also because it belongs to the somewhat restricted group of alkaloids which contain no oxygen, and Liebig, Gerhardt, Kekulé and Hofmann submitted it to close investigation without elucidating its constitution. It was Hofmann who, in 1881, proved that it was a compound closely related to piperidin but his conclusions, drawn from experiments with methyl and dimethyl piperidin as to its exact constitution, were unfounded.

Koenigs, after the conclusion of Hofmann's investigation came to the view that coniin must be a propyl piperidin. This view found a convincing proof in the work of Hofmann, who, by the distillation of coniin with zinc dust, discovered a base conyrin, which was not as expected, a reduction, but an oxidation product of coniin, and which stood in the same relation to it that pyridin does to piperidin, and

that it was a homologue of pyridin was shown by its yielding on further oxidation and pyridin carboxylic acid.

From these considerations Ladenburg was induced to take up the synthesis of coniin. The difficulties which he encountered, owing to the uncertainty of a change not occurring in the propyl group which he introduced, cannot be taken up in this place. He was, however, successful in his endeavours by condensing α picolin with paraldehyde to äthyl pyridin. This unsaturated compound on reduction gave inactive, normal α propyl pyridin. On combination of this base with dextro tartaric acid he was enabled to separate the inactive compound into dextro and lerorotatory modifications, the former of which proved in every way to be identical with the natural alkaloid. Some years later Engler condensed calcium picolinate with calcium propionate and obtained after the well-known reaction α äthyl pyridyl keton and subsequent reduction of this to α äthyl piperyl alkin, which, on continuous reduction, yielded coniin. Thus has coniin been produced in two ways.

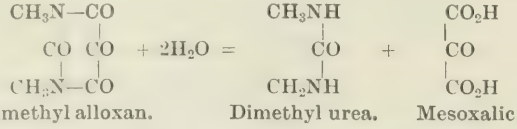
Next in order were three less important alkaloids synthesised whose production was not of interest from a technical point of view, but of great scientific worth. These were trigonellin, the alkaloid of trigonella, fœnum græcum by Hantzsch, and arekaidin, and arekolin from the areca nut by Jahns.

Piperin, the original alkaloid of pepper, was partially synthesised at first by Rügheimer in 1882, by the condensation of piperinyl chloride with piperidin. The piperinic acid from which the acid chloride was obtained was not made until Fittig had, by extremely beautiful work, shown its constitution, and afterwards Ladenburg and Scholtz effected its synthesis from proto-catechuic aldehyde.

The next two compounds are of more than theoretical interest, as one plays a large technical *rôle* and both are of interest from their relation to some important physiological processes. These are caffein and theophyllin. These do not, as before mentioned, belong to the pyridin group of alkaloids, but their history is closely bound up with uric acid and urea. Although the acid was discovered by Scheele so long ago as 1776, its connection with caffein was not established till Emil Fischer began his wonderful researches on the uric acid series, which have yielded splendid results.

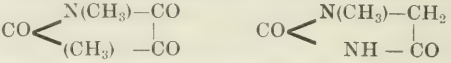
The decomposition products of caffein belong to a series of compounds which contain the grouping $C<\begin{matrix}N-C\\N-C\end{matrix}>C$ and which can well be supposed to be formed by the union of urea with dibasic acids. Caffein on oxidation with chlorine yields dimethyl alloxan, which, on

treatment with alkalies, forms dimethyl urea and mesoxalic acid, which contains the grouping above mentioned.

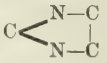


Dimethyl alloxan. Dimethyl urea. Mesoxalic acid.

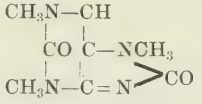
There is also formed at the same time mono-methyl urea. In both these we have groupings which are present in caffein and the question arises: In which way are they joined together in the alkaloid? This has been found by other decomposition products, *e.g.*, cholestrophan and methyl hydantoin,



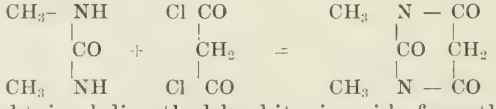
both of which contain the ring system previously mentioned.



The breaking up of caffein into mono methyl urea and dimethyl alloxan is a proof also of the fact that of the ten hydrogen atoms, nine are contained in the molecule as methyl groups, the tenth being peculiar in being replaceable by chlorine, bromine, hydroxyl, or amido groups. Further, the addition of two atoms of bromine clearly shows an unsaturated carbon bond. Fischer from these considerations suggested the formula



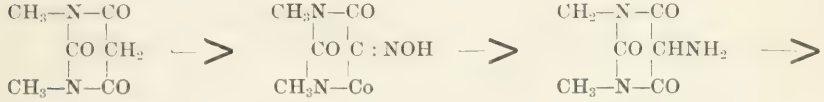
for caffein. Thirteen years after this it fell to Fischer and Ach's lot to synthesise this compound from the consideration of the investigation of Mulder on the reaction between the dimethyl urea and malonic chloride



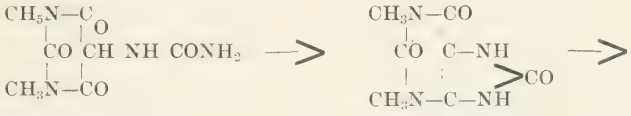
by which was obtained dimethyl barbituric acid; from this he obtained by means of nitrous acid, dimethyl violuric acid which gave on reduction dimethyl uramil. A. v. Baeyer had at the same time submitted the unsubstituted compound uramil to the action of cyanic acid, expecting to obtain uric acid by the reaction, and had obtained not that body but a pseudo uric acid, in which the second ring system was not closed. On treating dimethyl uramil with melted oxalic acid Fischer and Ach split off the molecule of water and produced dimethyl uric acid. By the action of phosphorus penta chloride on this compound, they obtained a substance which was also obtained on treating theopyllin, a second alkaloid in tea extract with the same

reagent. Now theophyllin has a methyl group less than caffein, and, as both on oxidation, yield dimethyl alloxan $CO<^{N(CH_3)-CO}_{N(CH_3)-CO}>CO$ it is clear that the third methyl group does not belong to the alloxan ring ; so that theophyllin must be represented by formula VI., in which chlorine is replaced by a methyl group.

Theophyllin can be changed to caffein by the action of methyl iodid on its silver salt. This is one of the prettiest examples of a compound being synthesised by purely scientific considerations. The following formulæ show the relation between the different compounds which led up to it :



I. Dimethyl alloxan. II. Dimethyl violuric Acid. III. Dimethyl uramil.



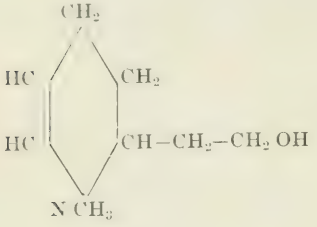
IV. Dimethyl pseudo uric acid cyanate. V. Dimethyl uric acid.

VI. Chlortheophyllin. VII. Caffein.

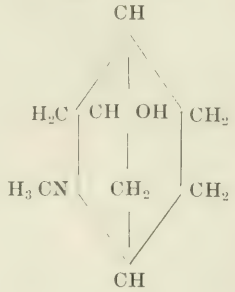
Partial Synthesis.

Atropin—The synthesis of atropin has not been a complete one, yet much successful work has been done in this direction since Liebig determined that its formula was $C_{17}H_{23}NO_3$. Ladenburg, after Kraut and Lossen had split it into two of its components, tropin and atropaic acid, combined these two to form the alkaloid. Investigating the latter product, he found it had the formula $C_6H_5\,CH<^{CH_3\ OH}_{CO\ OH}$ and determined it thus to be α phenyl hydracrylic acid, and the first synthesis of this acid, starting from acetophenon, was due to these observers working in conjunction with Rügheimer. They treated phenyl methyl ketone with phosphorus penta chloride, obtaining the ketone chloride, this treated with alcohol and potassium cyanide the compound $C_6H_7-C<^{OC_2H_5}_{CN}$ which on saponification after the well-known method with baryta water yields a saturated acid, atrolactic acid, the äthyl ester of which, with strong sulphuric acid, splits off

äthyl alcohol, giving the unsaturated atropaic acid. By treatment of this with hypochlorous acid, the chlorinated acid is obtained, which on treatment with nascent hydrogen gives tropaic acid. The acid part of atropin having been synthesised, Ladenburg, on the ground of some cleavage products of tropin, has suggested the formula I, which has been changed by Merling, with the consent of many chemists, to formula II.



I.

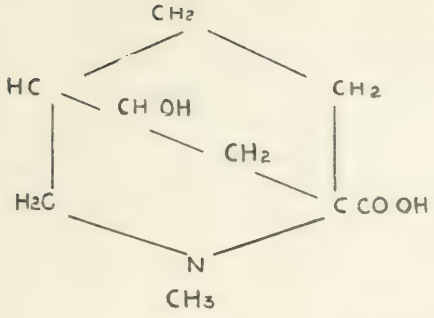


II.

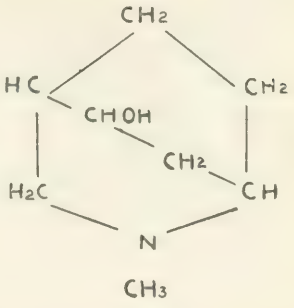
Although neither of these compounds has as yet been completely synthesised, yet, tropin has been built up again from one of its decomposition products which, according to Merling's formula, must be dihydro benzyl dimethylamin. This latter is a derivation of tropidin methyl ammonium hydrate, which is, in its turn, derived from tropin by dehydration. Now Merling showed that the monocyclic compound, the α methyl tropin, combined with two molecules of hydrochloric acid to hydrochlor α methyl tropin hydrochloride, which, with sodium hydrate, gave the base hydrochlor α methyl tropidin. This changed to tropidin methyl ammonium chloride, which broke up by distillation into tropidin and methyl chloride. The transformation of tropidin into tropin was previously accomplished by Ladenburg.

The next alkaloid, which is of great importance medically, is cocain. This compound bears a close relation structurally with the foregoing as Wilstätter showed, and also with the alkaloid α tropin found in Javanese coca leaves.

Cocain, on saponification, splits up into ecgonin benzoic acid and methyl alcohol. From this decomposition one may infer that ecgonin contains an acid and a hydroxyl group, of which the latter one is benzoylated and the former methylated in cocain. Ecgonin is very similar to tropin, and Einhorn has been able from the former body to prepare the latter. By dehydration ecgonin yields an hydro ecgonin which gives off carbon dioxide air on suitable treatment yielding tropidin. The relation between tropin and ecgonin, according to the newer formulæ, may be easily seen by comparing the two formulæ.



Ecgonin.

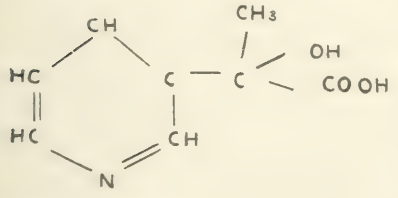


Tropin.

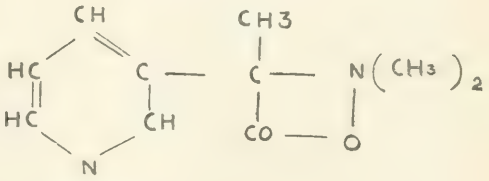
Ecgonin on treatment with benzoic anhydride and methyl iodide gives cocain. Taking into account the previous work on tropin one may say that the synthesis of cocain is far advanced towards completion.

Pilocarpin has also engrossed the attention of many observers. According to Hardy and Calmels it consists of a pyridin nucleus combined with a betain group in the β position.

Pilocarpin, on boiling with water, breaks up into trimethylamin and an acid of the formula $C_8N_9NO_3$. The barium salt of this acid on distillation yields C_7H_9NO, which on oxidation gives β pyridyl methyl keton hydrate, which can be prepared synthetically. The first named of these compounds is from these considerations a β pyridyl, α lactic acid, and from the splitting of pilocarpin into this acid and trimethylamin it may be assumed to have the formula



β pyridyl α lactic acid.

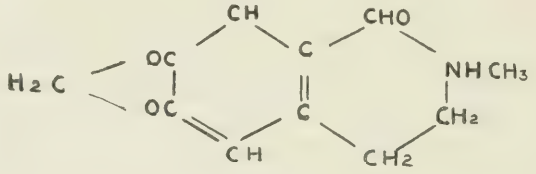


Pilocarpin.

Hardy and Calmels endeavoured to synthesise pilocarpin from its decomposition products. By treating β pyridyl α lactic acid with phosphorus dibromide and heating the bromo acid so obtained with dimethylamin, pilocarpidin was obtained. This when heated in methyl alcohol solution with methyl iodide and potash gave pilocarpinic acid. This on oxidation and dehydration with permanganate of silver yields pilocarpin. According to Herzig and Meyer pilocarpin contains but one group attached to nitrogen, but owing to the extremely unsuitable state in which the various compounds are obtained, it is too early

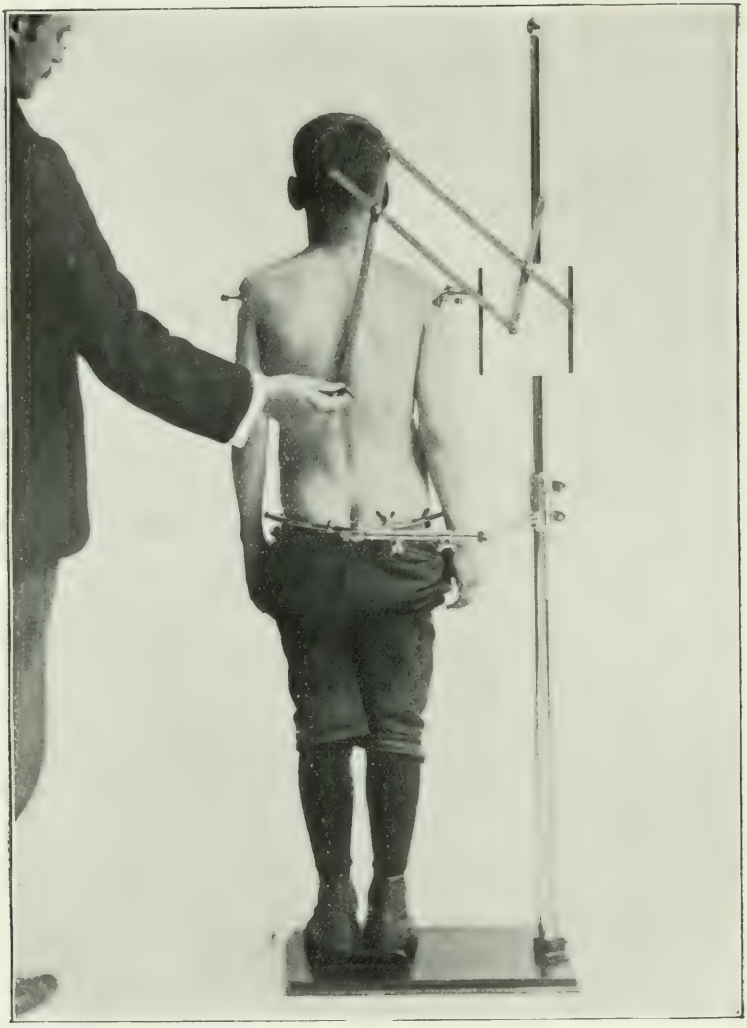
to form a definite opinion as to which is the precise constitutional formula.

The work of Schmidt and Freund has done much to clear up the constitution of hydrastin, the alkaloid of hydrastis canadensis, and we may be said now to have a fully formed idea of its constitution. The work which led up to the views of its formula would require a somewhat lengthy statement, which cannot be given here. One of its decomposition products (hydrastinin) has been shown to have the formula



This has been prepared synthetically, but the transformation into hydrastin has not been effected. Neither has the formation of opianic acid been completed, so that these two steps are lacking to the preparation of the original alkaloid itself.

I may here mention that much of the data given here are to be found in the admirable work of Scholtz " Die Kunstliche Aufbau der Alkalöide," and those wishing to pursue the subject further will find in it references to the original papers, which contain fuller accounts of the work done in this interesting field.



THE ACCURATE MEASUREMENT OF SPINAL CURVATURES, WITH THE DESCRIPTION OF A NEW INSTRUMENT FOR THE PURPOSE.

BY

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Almost the first difficulty that confronts the surgeon in dealing with a case of scoliosis is the obtaining of definite date on which to base a diagnosis and prognosis, a fixed starting point from which he can follow its progress; a standard by which he can test his course of treatment with a reasonable degree of accuracy.

Mere opinion as to the exact condition present in a patient is notoriously unscientific and inaccurate, especially in this disease, and a few figures in black and white, or an accurate chart, are worth pages of surmise or supposition.

In the measurement of curvatures we must obtain a record of the general asymmetry of the figure, as well as of the details of the deformity. One wants some quick and accurate way of getting at the difference in height of the acromia, of the points of the scapulæ, some graphic record of the deviation of the spinous processes from the straight line, of the differences in outline and level of the hips and iliac crests. And, again, the record will not be complete unless the rotation of the vertebræ is shown, both in the dorsal and lumbar regions. In angular curvature the nature and extent of the kyphosis must be displayed to give a clinical picture of the case.

Many methods have been used to get some of these results, and some plans have been used to get many of them, but I have not yet seen any practical scheme by which a complete picture such as I have just described has been obtained.

I need not enter into a detailed description of all the ways by which this subject has been attacked, but, among them, photography has certainly been the most popular. Perhaps the most fatal objections to its use as a routine practice are its expense, both in time and money, and its liability to mislead the observer by indistinctness, or other imperfections in the process of lighting the figure, or the developing of the plates.

Many plans have been described in which plumb lines are dropped

and deviations from them noted at different levels. The shoulder levels have been measured from the ground, and various other isolated facts have been taken. These methods are all imperfect and cumbersome, and, above all, lack that uniformity so necessary if such observations are to be of permanent value.

For recording the rotation which is totally neglected by the above-mentioned plans, Mr. Bernard Roth describes a method which is both rapid and accurate. The complete description of it is found in his text-book on the subject. Briefly, it is by moulding a strip of pure tin to the back at the desired level and making a tracing from this on paper.

Mary Putman Jacobi elaborates this method by using a hinged tape and encircling the whole chest or abdomen. This tape is removed, placed on a table, and plaster is run in, forming an accurate cross-section of the body at the level selected. This, although accurate, is imperfect, and its inconvenience in private practice will at once suggest itself.

Dr. Geo. W. Fitz, in *Boston Medical and Surgical Journal*, recommends, in measurements of the spine, to spot with a black-flesh pencil, the spinous processes from the seventh cervical vertebra down to the sacrum, together with the posterior iliac spines; to place the patient behind a screen consisting of a rectangular frame with threads strung vertically and horizontally, cutting the entire surface in inch squares to measure the amount of rotation of the spine; he uses the method described by Mr. Roth.

In the Cyclopedia of Diseases of Children, Dr. R. E. Roth describes a small instrument for recording rotation, which merits description.

A long pointer, with a pencil attached, moves freely by a swivel joint on a stand placed on the back of the patient, who bends well forward. Attached to the stand is a curved sheet of paper on which the pencil marks the movement of the pointer, the tracing being of course reversed; by varying the proportion of the two sections of the pointer the tracing can be made to any scale.

J. A. Weegel describes a graphic method of showing a cross-section (natural size) of the prone figure. This is open to the serious objection that the scapulæ and attached muscles mask to a great extent all sections taken in the upper dorsal region, an objection surmounted by having the patient stooping well forward.

Raymond Sainton took up this subject very fully in the *Revue d'Orthopedie* some years ago and described a hinged collar or belt of steel, in which the patient is encircled. Set in it at regular intervals are pointers like wheel spokes. These are shoved in till they touch the

skin, clamped, and the collar removed. A tracing from these pointers will show the body in cross-section. He also figures an adaptation of the pantograph for taking full-sized tracings of the spinous processes.

Many instruments have been devised, all more or less complicated and expensive, for taking such tracings. The most elaborate I have seen, that of Schulthess, though accurate, gives a tracing life size, and too big for convenience. It is not adapted to record rotation. Its size and expense would make its general introduction impossible. Beehrings uses a glass plate on which the silhouette is traced, but I could multiply example on example till one is tempted to cry that of making many devices there is no end, and yet one must agree with the author in a recent work on Orthopoedic Surgery when he says that "An inexpensive and efficient scoliosiameter is yet to be invented."

An efficient instrument should record in inches or centimeters the difference in levels, of the shoulders, of the points of the scapulæ, and of the iliac crests. It should measure the deviation of the spinous processes at all levels. It should show the outline of the hips and shoulders that differences may be noted, and, lastly, it should measure the amount and show the nature of rotation when present.

In this instrument an attempt has been made to fulfil these conditions. It consists of a fixed horizontal iron stand, into which a rigid upright rod is screwed firmly. To this rod two arms are attached by collars that can be moved up and down or clamped by thumb screws. The lower arm passes behind the patient and clamps the hips, preventing any sidewise movement. The upper arm passes in front of the patient and fixes the shoulders. To the collar of the upper arm is attached, by a hinge, a plate, to which a pantograph is screwed, set so as to make a tracing reduced to one in four. The paper, which is stretched over this plate and held by clips behind, is ruled in eighth inch squares. Hence, a line passing vertically through eight squares or one inch, would represent a distance of four inches covered by the pointer. It is more accurate and convenient to use a reversible pointer, a short arm for the spine and scapulæ, and a longer for the outline of the shoulders and hips.

To take a tracing the spinous processes are first marked with a flesh pencil and the patient is placed upon the stand. The hips are first clamped at the level of the trochanters, the shoulder arm is then moved up or down, adjusted and clamped, after the patient has settled into the habitual position. The spine is followed by the pointer, the gluteal cleft and the points of the scapulæ noted, and then an outline of the shoulders and hips is rapidly traced.

In taking cross-sections to show the rotation, the patient stands bent over, and the end of the pantograph easily follows the outline of the back at any desired level.

The amount of the difference in levels, or the deviation, is obtained by following the horizontal or vertical lines and counting the squares on the paper, for you have an accurate map drawn to scale of the back and its bony points.

The plates will illustrate better than words can describe the forms of certain typical cases from my case book. Fig. I. is from a young man, the difference at the acromia being 2½ inches, taken when standing with heels together, and in his habitual position.

In Fig II. the cause of the curvature is shown in the difference of height of the iliac crests and tilting of the pelvis, due in this case to shortening of the left leg. The cross-section taken at the level of the third lumbar vertebra shows a projection of the right side and a corresponding depression of the left.

Fig. III. shows a very extreme deformity, due to infantile paralysis The projection of the left hip is very noticeable.

Fig. IV. shows two tracings plotted on the same chart, the iliac crests being taken as the starting points. It will be seen from this how improvement under treatment can be clearly demonstrated.

If we could select some standard set of measurements instead of continuing in the present haphazard way, every man having a system which may serve for himself, but is a sealed book to his neighbor, there would be a chance of comparing our work one with another, and arriving at results in the treatment of scoliosis that would be at once definite, intelligible and scientific.

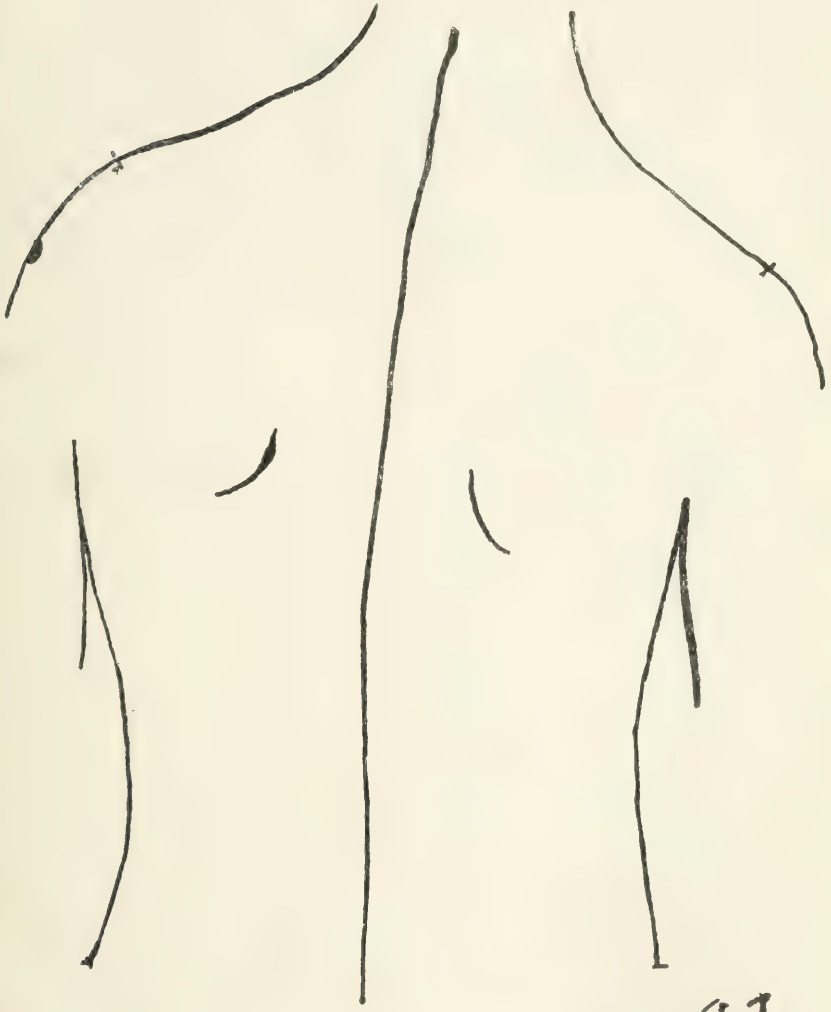

Fig 1

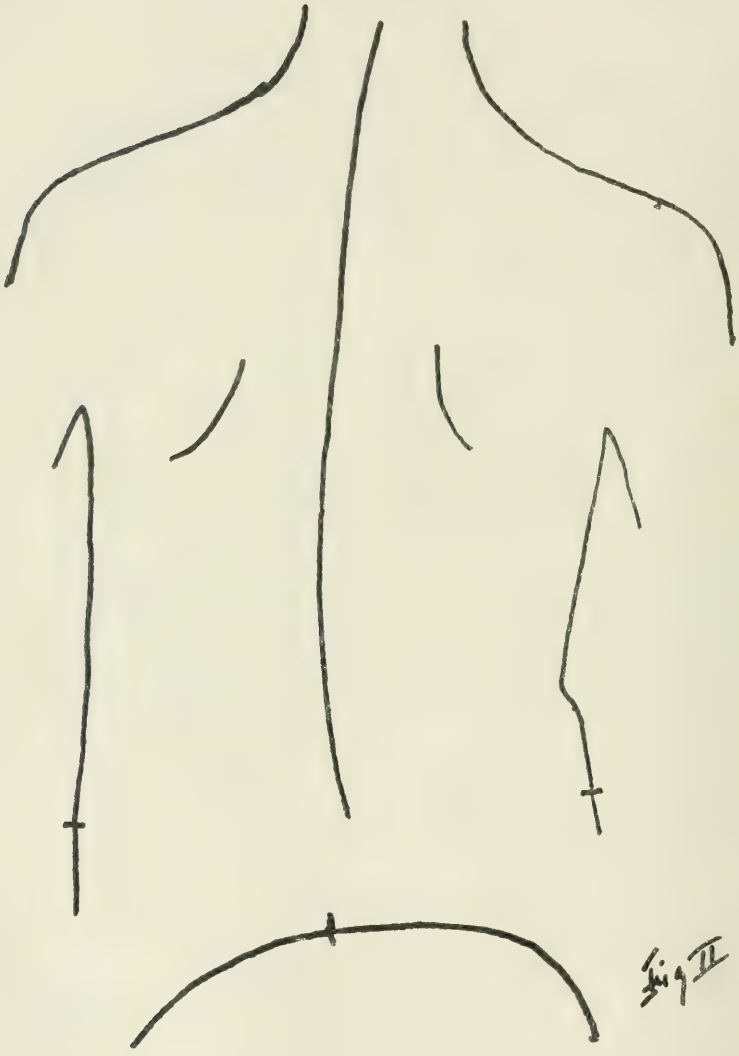
Fig II

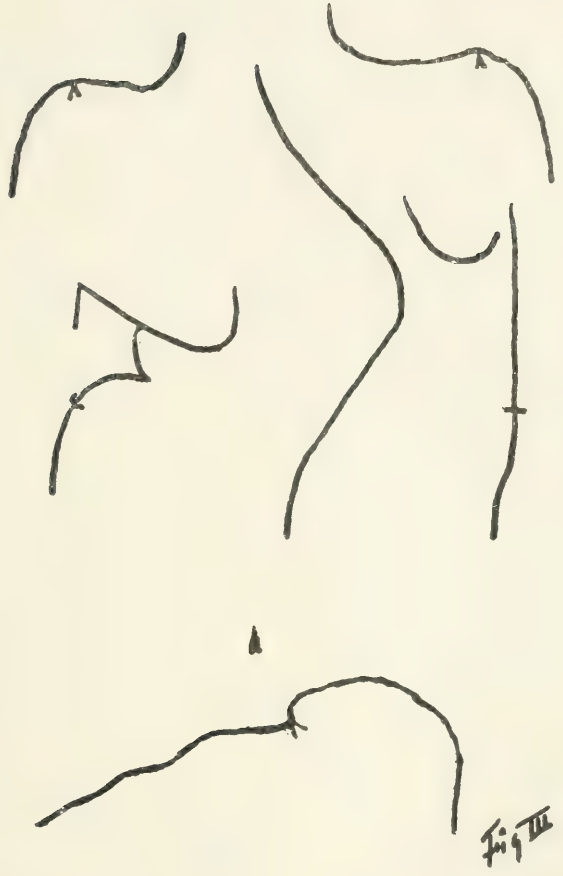
Fig III

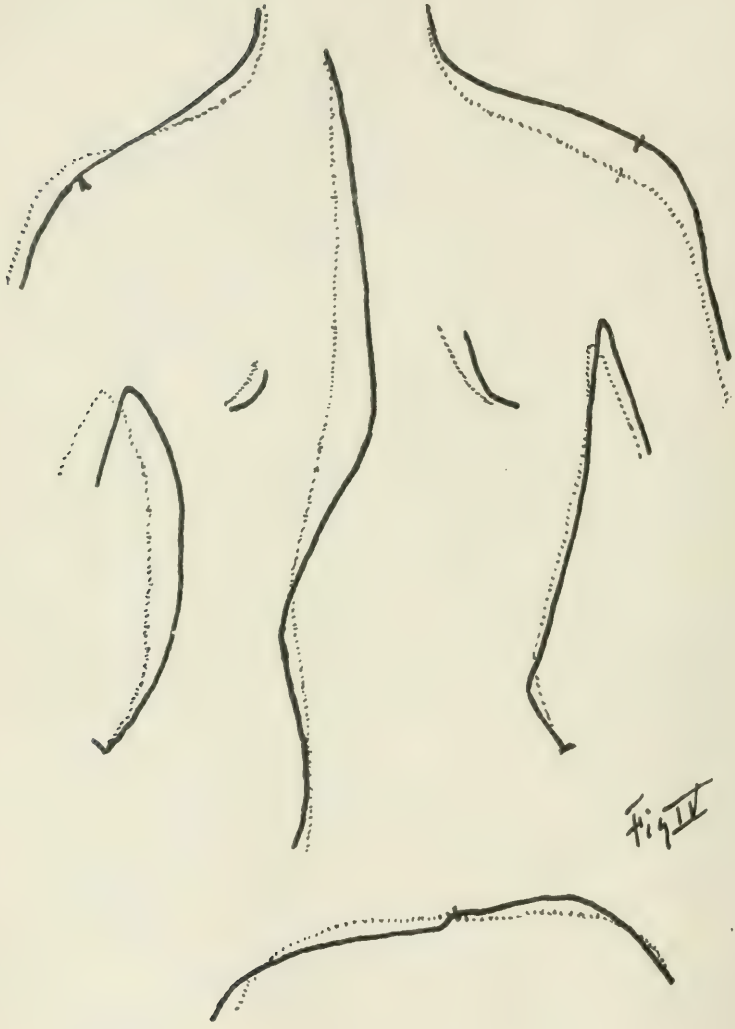
Fig IV

DISCUSSION ON THE TREATMENT OF SYPHILIS.

BY

W. WHITLA, M.D.,

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The treatment of syphilis is a wide subject and I feel honoured at being called upon to open a discussion on it. Whether this New World was the original home of syphilis or not we need not pause to debate, but the marked advances made in the study of syphilis of late years on the Continent of America make the present time and place most desirable for discussing the therapeutics of this interesting malady. At the start, permit me to say that I come before you not with new light, but for new light and knowledge, the aim of the officers of the Section being to elicit the views and experiences of the numerous observers here and in the United States. My duty will therefore chiefly lie in the selection of some of the most interesting and important debatable points in the therapy of the disease. Fortunately it is easy to indicate the main line upon which our discussion is to run, since there are but two drugs which need be considered—mercury and iodides. In the Old World there is a small and steadily diminishing number of men who adhere to the idea of a non-mercurial treatment of syphilis, but though I know nothing of the presence of such a minority in Canada or the States, I should be surprised to hear of it, because I believe such a view would be at variance with the untrammelled progress in spirit which is the characteristic of the great Canadian branch of our profession.

My own professional opinion was formed in a school where my two chief teachers were non-mercurialists, and I had opportunities of observing the results of expectant methods alongside those of surgeons who administered mercury, and I need not tell you that I have never treated a case of syphilis since without employing the drug. It may be taken as proven that mercury has a specific or curative action upon syphilis; we may thus limit our attention to the following points:—

1. How mercury and the iodides are supposed to act.

2. When should mercurial treatment be started? Especially should it be given in the primary stage?

3. The various methods for its routine administration and its dosage, and the length of time necessary for mercurial treatment.

4. The treatment of tertiary symptoms and congenital syphilis.

Notwithstanding the marvellous strides which pharmacology has recently made in elucidating the mode of action of many drugs it has almost thrown no light upon the therapeutics of the so-called alteratives. These agents when given in ordinary therapeutic doses to perfectly healthy individuals often produce no appreciable action, but when similar doses are administered in certain diseased conditions the disease disappears without leaving any clue as to the method by which the drug cured. This is frequently observed with mercury, arsenic, gold, iodides and colchicum. Addison and Cohnheim demonstrated that mercury had the power of arresting the suppurative process in the frog's mesentery by its paralysing effect upon the protoplasm of the cells.

The lethal action of the soluble salts of mercury upon the minute forms of life has been long demonstrated, and this will almost certainly prove the key to the explanation of the curative action of the drug in the secondary stage of syphilis. That syphilis is caused by a micro-organism seems certain, and it will be an easy matter to demonstrate the action of mercurials upon it as soon as it can be isolated and cultivated. Whether rubbed into the skin, administered by the mouth, or other route, mercury and its preparations are absorbed and find their way into the blood. In ordinary inunction it is clear from the observations of Binz that the ointment is not absorbed through the uninjured epidermis or cutis vera, but that it finds its way in through the hair-follicles and sebaceous follicles, and through the orifices of the sweat glands. In a few days the globules become coated with oxide *in situ* and soon disappear into the blood after solution by the chloride of sodium, fatty acids, albumen, and glandular secretion, probably in the form of an albuminate kept in solution by the natural chloride of sodium. In a similar way the bichloride and other soluble salts are absorbed from the alimentary canal and insoluble salts like calomel are probably rendered soluble by the formation of an albuminate which is itself kept in solution by the chloride of sodium. Pure calomel dusted over the conjunctiva is soon found in the urine as a soluble salt of mercury (Kammerer).

It is thus obvious that in whatever form the metal is administered it finally enters the blood and there meets the syphilitic poison which it destroys. I think it was Mr. Hutchinson who first spoke of mercury as a vital antidote to syphilis. The term is at all events used by some as implying that the metal is a poison to the living syphilitic organism in contradistinction to its action upon the chemical poison probably secreted by the parasite. There is another aspect of the

question, which though it appears to be obvious is singularly overlooked, viz., that syphilis is a true vital antidote to the poison—mercury. In this statement will be found the key to the difficulty of dosage, duration of treatment, and many other puzzling questions. I believe that so long as the living virus of syphilis remains in the blood and tissues of the victims of this disease mercury will spend its poisonous force upon the virus without fear of injury to the patient. As soon as the living antidote to the mercurial poison is exhausted or destroyed, then, and not till then, will mercury begin to act deleteriously.

If this be accepted as true or probable a working hypothesis is at once obtained for the dosage. It is well known that small doses of mercury have been found to exert a tonic action upon the non-syphilitic patient, and that marked increase of weight sometimes follows its administration, but it is almost certain that even these small doses if prolonged will cause general deterioration of health. Doses which the syphilitic patient can tolerate without the slightest inconvenience would soon cause serious injury to the perfectly healthy subject. This is especially evident in congenital syphilis, where one sees puny and apparently dying children thrive and grow fat and ruddy upon an amount of the metal which would probably cause death or serious injury to perfectly healthy infants. Mercury acts also in syphilis upon the morbid cell growth which is characteristic of the disease We have a demonstration of this when the ointment is gently rubbed over a patch of the secondary eruption, or more strikingly when calomel is dusted over condylomatous growths. The specific cell growth is rapidly and painlessly destroyed.

The metal is eliminated in all the excretions of the body, and Oberländer found that the kidneys continue to throw it out for more than six months after the last dose has been administered.

The action of the iodides is not so simple. It is generally taken for granted that as iodides of sodium and potassium are not germicides, that therefore they do not act upon the living virus of syphilis. The generally accepted view is that the iodides act solely upon the cell growths which are so characteristic of the disease. Thus Brunton believes that the iodides act upon the tissues and not on the poison. He likens the syphilitic process to the growth of the caterpillar in the oakgall, and he believes that large doses of the iodide act upon gummatous tumours, which he regards as analogous to the galls, and they spare the poison or caterpillar, which then goes on to form other gummatous deposits. This is possibly an analogy to which exception may be taken, since it is probable that there is no caterpillar in the tertiary

stage. Most authorities state that iodides have no visible effect upon the syphilitic germ in the early stage of the disease, but that in the late secondary period they markedly assist the action of mercury in destroying the cell growths: in the tertiary stage their influence is most striking and sometimes may be styled marvellous, but it appears highly probable that their influence is not permanent unless supplemented by mercurials. It is not, however, safe to assume that the iodides exert no germicidal action in syphilis, since Binz has demonstrated that they are readily decomposed by living protoplasm, which under conditions identical with those in the living body immediately sets iodine free in the tissues, and he strongly holds that when we see tumours or swellings cured by the internal administration of iodide, we are justified in assuming that in them the liberation of iodine (which is easily demonstrated when carbonic acid, protoplasm, and iodides are brought together) is continually going on as long as the iodide circulates in the blood and that the free iodine gradually destroys the cell growths or the micro-organisms which produce the tumours.

Passing over numerous interesting speculations we come to the second point for discussion—when should treatment be commenced? Thanks to the brilliant labours of Taylor, we need not pause to discuss the value of excision of the chancre, he has demonstrated the folly of such a procedure.

Hutchinson and those who follow him strongly advocate the administration of mercury as soon as the state of the sore permits of diagnosis. He affirms that if this be done, "the patient will usually entirely escape both sore throat and eruption," and "that it is thus perfectly possible to suppress syphilis and to prevent the occurrence of any of the humoral group of symptoms." The conclusions of Hutchinson are obviously open to certain fallacies, but he has evidently discounted these, or allowed for them, and in the numerous hosts of cases treated upon this plan by careful observers there appears to be strong presumptive evidence that many of the cases in which no secondary symptom appeared were cases of genuine syphilitic chancre which would have exhibited secondary symptoms had the antidote been delayed in its exhibition.

Perhaps no single point in the problem of syphilis has been so hotly debated as this so-called abortive plan of treatment. The term is an unfortunate one, and has led to misconceptions. Thus theoretically speaking, it might be proved that it afforded the most successful and satisfactory method of treating syphilis, though it might be impossible to prove in a single case that real abortion of the disease had occurred.

Mr. Hutchinson has been equally unfortunate in his description of the method as regards dosage, which he styles as "the continuous use of small doses over long periods," but this will be referred to presently. I have satisfied myself in many cases of the absolute truth and accuracy of Mr. Hutchinson's results, and in a few I believed that secondary symptoms were entirely prevented. One arrives at such a conclusion by observing the faint rash which appears at a late period if the mercurial be suspended, and the absence of rash in those cases where the drug was not stopped but used continuously for a long time. Taylor and Kaposi and others are, upon the other hand, satisfied that no advantage or possible benefit to the patient is lost by withholding mercury until the onset of the second stage. These authorities affirm that his syphilis will be more orderly and more amenable to treatment, and that there will be less difficulty in the mind of the physician and of the patient in pursuing a vigorous mercurial course. It cannot be denied that it is often impossible to get patients to submit to prolonged mercurial treatment in the absence of evidence that they are really suffering from genuine syphilis. This is a very serious objection to the so-called abortive plan. The physician, after say four months' mercurial treatment, may pause and say to himself possibly, "I am giving mercury to a patient who, though he has had a hard, indurated sore, may not have any syphilis." This is a still more serious objection, and proves that mercurial treatment should not be actively commenced till the induration is such as absolutely satisfies the attendant that he is dealing with the primary stage of a true syphilis.

We may look forward with hope that the experiences of the eminent observers who are expected to join in this discussion will assist us in coming to a conclusion upon two distinct points. First, is it possible to abort syphilis by giving mercury in the primary stage? Second, if this be possible, is the plan one that can be used as a routine practice in treating syphilis. We may pass on and consider how the use of mercury will best meet the needs of the syphilitic patient who comes before us with the skin eruption just out. All will agree that now no delay in the exhibition of the remedy should take place, but there is the widest difference of opinion about the best way to administer the drug. Two plans are recognised: (1) The continuous method, and (2) the interrupted. The first method is that advocated by Mr. Hutchinson and pursued as part of his abortive plan. He described it in his last article as that of the continuous use of small doses over long periods. It is called by others the tonic treatment.

It will be observed at the start that his dosage is hardly what he

describes himself, and certainly not what many of his opponents designate it as—the method of using infinitesimal doses of mercury.

The preparation which he selects is hydrargyrum cum creta, and he administers it in the pilular form with opium, and he gives 1 gr. of the mercurial preparation four, five, six or seven times a day, regardless of meals, his object avowedly being to get in as much mercury as possible without causing salivation or diarrhœa. In the course of twelve months' treatment the patient would have swallowed 2,500 grs. grey powder, or over 800 grs. of mercury, if the maximal doses of the preparation were adhered to. When this treatment has been commenced during the primary stage and continued for nine or twelve months, Mr. Hutchinson, as before stated, affirms that the syphilis may be wholly suppressed.

I think you will agree with me that, omitting the consideration of the period at which this treatment is commenced, the dosage is almost as orthodox as the most ardent mercurialist can desire. Practically, it only differs from the interrupted plan, not in giving so much less mercury but in giving it for a longer period without rest or suspension. My own experience has satisfied me that many patients cannot stand a larger dosage, and that most will be unable to bear this amount for more than six or nine months. When we study the reports and writings of syphilographers one cannot fail to be struck with the numerous points at which these so-called rival treatments fuse and become indistinguishable.

A strictly tonic mercurial treatment is useless. If mercury be given in such small doses as would improve the tone of a healthy man, this dosage will be futile when administered to a syphilitic subject, and the long-continued treatment of syphilis by minute doses of mercury must be condemned. In practice the distinctions between the continuous and interrupted plans break down. One physician starts to treat a case as an ardent admirer of the continuous plan ; he endeavours to get in as much mercury as possible without injury to his patient, but he will often find that he has misjudged his patient's powers, and he must stop at the end of four or six months, and give him a rest. Another starts with the view of saturating the system with the metal, and finds just when he intended to stop and interrupt the treatment that some suspicious symptom warrants a continuance for several months, and the case becomes one treated almost continuously,

My own limited experience is decidedly in favour of making the treatment as continuous as possible for at least nine months after the appearance of the eruption. I believe this is less likely to lead to

relapses and early tertiary symptoms than a four or six months' course of greater severity. The great problem in the successful treatment of syphilis is the dosage. This it is impossible to know without trying, and it is well to have no very firm preconceived notion upon the number of grains, or even the exact mercurial preparation to be adhered to. The antidote must be given not by arithmetical calculation but by sound common sense. It must be given in proportion to the amount and activity of the virus present and with due consideration to peculiarities exhibited by the patient, the one aim of the medical man being to get as much mercury introduced into the patient's blood as possible without producing any injury to his tissues or organs.

The conditions of the gums is generally regarded as the test for the dosage. It is a most fallacious test; the same holds good for the bowel. Very large amounts of mercury are administered at Aix without the slightest effect upon the mouth, because I believe that nowhere is such scrupulous attention paid to the state of the gums. This detail of putting the teeth, gums, and mouth into a healthy state prior to treatment, and maintaining them in this state all through the mercurial course is of the most vital consequence to success. I know of no other detail to be compared with it in importance. Vegetable astringents, like rhatanny, and catechu alternating with alum solutions and carbolic washes, should be most religiously employed during the months of treatment.

As a matter of fact, I have scarcely ever used opium with the mercurial. Should the bowel and stomach rebel, which is exceedingly seldom, I give them a rest and resort to the skin.

The syphilitic phenomena, that is, the rash, patches on the tonsils, condylomata, iritis, etc., afford a better indication for dosage than the mouth. If these remain uninfluenced or not sufficiently influenced, mercury may still be pushed fearlessly. As long as there is abundance of syphilitic virus, the drug may be pushed and the secondary manifestations are a rough estimate of the amount and activity of this virus.

But what indication has the physician for further dosing when these disappear and the mouth keeps healthy? Here, permit me to say, is a vital point. I believe body-weight affords the best of all guides. There is little danger (perhaps none) of doing any injury to a patient by mercury as long as he keeps gaining in weight and is not markedly anæmic. For nearly twenty years I have made careful weighings every fourteen days or more of all symphilitic patients, and soon one comes to know much of what is going on in the battle-ground between the virus and the antidote by placing the patient in the balance.

In a severe case of syphilis, especially in the late secondary stage, a weight chart is as essential as is the temperature chart in a case of grave typhoid. When weight falls without obvious cause the metal must be suspended (iodides come in here with benefit). Often a fall in the body-weight is the first sign that the syphilitic virus has been completely destroyed. This may be seen in the abortive plan of treatment, and may be taken as indicating that the mercury is beginning to cause deterioration of the blood, and increased metabolism having no longer its syphilitic antidote present to neutralise its action. These weighings, when possible, should be made upon an accurate machine in the physician's study.

The length of the course should be determined, in my opinion, not by any preconceived rule. I hesitate to state this (almost in the phraseology of a law) in the presence of so many distinguished members of the profession, many of whom, I have no doubt, have had a larger experience in the treatment of this affection than myself.

My experience as a teacher has shown me how dangerous it is, in a combination of circumstances like those under consideration, to place before the student mind the cut-and-dry formula that syphilis should be treated by any special mercurial salt in any fixed doses, for any given number of months under any hard-and-fast continuous or interrupted plan. We all know how prone such formulæ are to become lifelong rules of proeedure. Each case should be treated upon its own merits, and the plan intelligently modified, and, above all, the duration of the course decided by the results, no two cases, perhaps, running exactly alike. After, say, nine months of the continuous method, if it has not been found necessary to interrupt it before, the patient may have a complete rest for two or three months, should no trace of the disease be present. It is a good plan, then, to give a mild mercurial course, combined with iodides every alternate six weeks for nine months more, and finally, after a rest of two or three months, a three months' course of fair doses of the iodide should complete a two years' course in all.

Sir William Gowers, in his Lettsomian Lectures, recommends that every syphilitic subject for at least five years after the date of his last symptoms should have a three weeks' course of treatment twice every year, taking for that time 20 or 30 grs. of iodide a day, and he asks, if this practice were generally adopted, is it not reasonable to anticipate that grave lesions would be much more rare ?

Time does not permit me to dwell upon the great importance of a wisely regulated diet, with hot or Turkish baths, occasional changes

to the seaside, with the necessary restrictions regarding alcohol and tobacco, and the avoidance of every conceivable depressing agent.

It will now be necessary to glance at the different methods of administering mercury by the mouth and the skin. The method of injections will be dwelt upon by a later speaker. A favourite mercurial preparation on the Continent, and as far as I can judge in America, is a substance which is much less used in England, that is, the proto-iodide or green iodide or mercurous iodide, prepared by rubbing iodine and mercury together. Owing to its liability to decompose it has been rejected from the German and *British Pharmacopœia*. Taylor begins with three daily doses of $\frac{1}{4}$ to $\frac{1}{3}$ gr. This dosage in a few days is increased to 1 gr. three times a day, which is to be kept up for six months. He states that it is rarely necessary to give more than 3 grs. of the protoiodide in a day, and that most cases will do with about 2 grs., or even less, and he condemns the combination of opium with the drug as unnecessary and mischievous.

Milner states that of all the forms of syphilis the vesicular rash is the most difficult to deal with. It is most frequently seen in fair-haired patients, chiefly women, and in those who drink large quantities of wine. For such the green iodide should always be selected. He urges the importance of the difficulty in treating barmaid's syphilis and of checking the disease in actors, commercial travellers, billiard markers, and the class of syphilitic patients who sits up late at nights. For all these the green iodide should be preferred to every other preparation of mercury. It appears to be the most active form for administering mercury in the early stages, but it is doubtful if it be so valuable or active later on. My own feeling is that it is not so manageable as the grey powder, but this is a matter of practice or of experience. Grey powder, that is mercury rubbed up with two parts of chalk, as already stated, is Mr. Hutchinson's choice. Though he recommends up to 6 or 7 grs. daily, I believe 3 or 4 grs. daily for nine or twelve months will meet all the requirements of the great bulk of cases.

My own practice is to administer calomel beginning with two Plummer's pills, 5 grs. each daily. Such a dose will contain 1 gr. calomel, 1 gr. sulphurated antimony, and 2 grs. guaiacum resin. The bowels are seldom influenced, and ptyalism is rare when the mouth is well cared for. After a week or ten days 3 pills may be given daily, and I believe it will be found an advantage to change the calomel to corrosive sublimate after about three months, and to combine iodides with it. As soon as the calomel influences the bowels I give the grey powder.

Blue pill does not seem to be a favourite amongst specialists; it appears to be more difficult to manage and more liable to cause salivation and diarrhœa when pushed for any length of time. It is the preparation which may be selected for a preliminary smart attack upon the disease for a few weeks, and in those cases not seeking early advice. When signs of ptyalism do show themselves under such circumstances I think they can be more quickly suppressed or checked than if produced by any other mercurial, even when another mercurial preparation in moderate doses is administered immediately upon stopping the blue pill.

There is much to be said against chopping and changing the mercurial during a course of treatment, but there is also something to be said in favour of it. I believe one can often get in more of the metal in this way. Suppose under any preparation signs of ptyalism suddenly show themselves without being able to offer a working hypothesis, I think it will be found that a change of the preparation often will more effectually restrain this than if the drug be stopped altogether. Excellent results are obtainable by using the red iodide, the tannate, and the bichloride.

It seems certain that the statement of Victor de Méric is correct, that is, that it does not matter in what form mercury be given, provided that it be kept up for one, one and a half, or two years at least. All practitioners complain of the great difficulty of getting patients to adhere to the treatment for a sufficient period. It cannot be denied that this difficulty is greatly increased by the habit of some physicians selecting a particular form for their mercurial preparation which they adhere to rigidly, and the patient wearies of the pill, powder, or mixture, and throws it aside, whilst he might be tempted to continue longer had the same dose and mercurial preparation been given in an altered pharmaceutical form.

The necessity of keeping the patient in a condition which will enable him to pursue his ordinary avocation has compelled me to describe a plan of treatment which is far from an ideal one. Thus if the subject of syphilis should be amongst the ranks of the wealthy and should he have the misfortune to belong to the idle class, a more certain and efficacious plan of treatment might be easily marked out for him provided he were willing to devote all his time to the therapeutics of the disease. Such a plan would be the inunction method at which we shall now glance for a brief moment.

The ointment of the *British Pharmacopœia* is much too strong, and the German *Pharmacopœia* preparation is preferable in every way. It contains one part of mercury rubbed up with two parts of a mix-

ture of lard and suet. With such an ointment every case of syphilis can be treated more certainly and more rapidly than by all plans of mouth medication. It is very inconvenient, requires care, often the aid of an attendant, and the free use of baths; it exposes the secret of the patient's malady to those about him, and soils his bedclothes and undergarments. These are reasons which will probably always operate in preventing the inunction plan from becoming a routine method of treating syphilis. Nevertheless it is the best of all ways for treating the disease, and in some cases it is absolutely essential to the patient's life that he resort to it.

By a careful attention to the state of the patient's mouth enormous quantities of the antidote to syphilis may be introduced into the system without producing any effect whatever beyond the rapid cure or total disappearance of all syphilitic symptoms. I do not know of any more marked and unmistakable result in therapeutics than the results of this method in severe cases of syphilis. It may be used with advantage in all cases, but there are cases where it becomes the duty of the physician to insist upon the method by inunction: (1) In all grave attacks of the disease where the symptoms set in with unusual severity it should be resorted to. (2) In all cases where time has already been lost and the patient has not sought advice till the secondary phenomena have been in full swing for several weeks, as, for example, when the patient first seeks treatment for a retinitis, iritis, or otitis. (3) In nearly all cases of cerebral syphilis and where spinal symptoms supervene at an early stage. (4) In syphilis appearing under certain conditions after marriage. (5) In so-called malignant syphilis.

To carry out the inunction method properly, it is almost essential that the patient gives himself up entirely to the treatment. This is the explanation of the very superior results obtained by the use of the ointment. One cannot say that in order to use inunction the patient must give up all business and keep to his house, but if he is able to do so, larger doses can be safely administered and much time saved. My own observation leads me to believe that where a patient, especially in the winter season, insists upon attending to his ordinary business, as good results can be obtained by grey powder, the green iodide, or calomel by the mouth. But if he can devote himself to 75 or 100 inunctions as carried out at Aix-la-Chapelle we can confidently assert no better or more certain results can possibly be obtained in the treatment of syphilis.

During the carrying out of a mercurial course by the mouth where the secondary signs do not show a tendency to disappear great benefit

may be obtained by suspending the pills and beginning inunctions. In the late secondary stage it is often an excellent plan to rub in the ointment and give the iodide by the mouth. The plan cannot be properly carried out without a good bath (to 98° F.) and a mild rubbing with carbolic soap, and occasionally the sponging of the body with weak permanganate solution. After thorough drying with warm linen towels, the ointment (33 per cent.) and recently manufactured, may be rubbed in. As regards dosage a good average rule will be 1 drachm or 60 grs. of this ointment to be used daily. At Aix the practice is to rub in 38 grs. of the ointment twice a day into the different regions of the body. Thus the professional rubber takes the requisite amount of the drug, and after squeezing it between his palms he rubs it upon the first day into the skin over the inner sides of both arms, upon the second day the skin over the inner aspect of the thighs is attacked, and so on, winding up with the back on the sixth day, and a rest upon the seventh. After each rubbing the patient puts on a flannel gown, and without washing, goes to bed. The warm bath is resorted to in the mornings.

In severe cases double this amount of the ointment may be rubbed in. Thus in cranial syphilis I have resorted to 3j morning and evening for some weeks without producing salivation. As in the plan of mouth administration, each case must be closely watched and the dosage modified by the effects produced. Twenty to thirty minutes generally suffice for each inunction and hairy parts must, as far as possible, be avoided, or shaving may be resorted to. A distinct advance has been made in the treatment of syphilis by the observations of Taylor, who first pointed out that the small round cell infiltrations which surround the lymphathic and vascular channels are liable to break out into fits of active proliferation after apparent dissolution by mercury. In this way a general infection may occur after a period of latency or apparent cure, and hence the vital importance of attacking as large an area of the cutaneous surface as possible during the inunction course, with the view of destroying all foci of the disease. There is, therefore, good reasons for regarding inunction as the ideal plan, being a combination of the local and constitutional methods, even when commenced in the secondary stage of the disease. This consideration also would seem to support the view that the continuous plan should give better results than the interrupted. With the view, therefore, of allowing as few foci as possible to escape, Taylor divides the surface of the body into eleven regions, which are all vigorously attacked by the ointment. An ointment of white precipitate (6 per cent.) may be applied to the scalp and beard. In this way there can

be little doubt that his plan is better than the older methods. It has the one drawback of demanding the aid of a rubber or attendant, as the patient cannot possibly reach the dorsal regions.

With care in severe cases as many as 100 inunctions may be accomplished without producing salivation, but in practice it will generally be found that the rubbings must often be suspended for a few days at a time in the presence of signs of threatening saturation; and it must never be forgotten that salivation may more suddenly appear and be more severe than in the mouth administration. Hence the necessity for greater care and watchfulness and scrupulous attention to the state of the mouth and gums. It does not appear that any special virtue attaches to the sulphur baths or waters which are so often made a portion of the routine of inunctions in various Continental resorts.

Time does not permit me to touch upon the methods of treating syphilis by mercurial plasters, soaps, fumigations, thermal and other baths. As a rule, they are not suitable for routine, though all-valuable under certain conditions. As already stated, the officers of the Section will welcome any expression of opinion from anyone who has special experience in their use, or in the practice of treating the disease by hypodermic or deep injections of mercurial salts.

Our next consideration is the place that the iodides should take in the routine treatment of syphilis. If we believe that they have, like mercury, a germicidal action as well as a destructive effect upon the cell formations, theory would suggest that we should begin the campaign with these drugs in conjunction with mercury; but practice teaches us that they are of little, if any, use at the beginning of the secondary stage, and some authorities go so far as to state that iodides in the exanthem stage of syphilis do considerable harm.

I think I am correct in saying that in the great majority of cases of syphilis most authorities would agree in saying that the iodides need not or should not be given in the secondary stage at all, perhaps all would agree that for the first six months iodides should not be administered.

It is of importance to consider what are the conditions justifying the exhibition of iodides in the secondary stage. Hutchinson states that they should be given when the bone pains are severe, or when the mucous membranes suffer severely; but clearly there are other conditions which demand iodides in combination with mercury, and these are the supervention of symptoms in the secondary stage, which generally are to be considered as usually tertiary manifestations, such as brain and spinal complications, that is, convulsions, paraplegia, and

swellings or new growths appearing anywhere, as in the testicles, liver, or spleen. Eye and ear complications call for iodides early. In all these exceptional instances, the iodide of sodium, which is preferable to the potash salt, may be given with the bichloride of mercury in solution; but since all these cases belong to the category of severe cases, by far the best rule is to commence inunctions without delay, and give the iodide in full doses by the mouth.

I think another indication for the administration of iodide even at an early stage is marked febrile or fever temperature. The drug appears to possess a distinct power over the temperature in the eruptive stage, and since it effectually depresses the fever it may safely be employed when this is a marked feature.

After the termination of a six or nine months' course of mercury, when the secondary symptoms have disappeared, the French practice of a two or three months' course of doses of the iodide is an excellent one.

As regards the treatment of the tertiary period little need be said. When the disease in the secondary or primary stage has been treated in the thorough and energetic manner described, no tertiary symptoms will likely ever be manifested. The majority of cases presenting tertiary signs are found among those where mercury had been given only for a short period, or not at all. Often they are met with where a mercurial course has been commenced with severity, and where the salivation had caused the treatment to be soon suspended and never again resumed.

There can hardly be a doubt about the wisdom of immediately commencing treatment by large doses of iodide. But the very striking power of the drug over gummatous growths sometimes causes the physician to trust to it alone. Striking as these results are, they will not prove permanent without the assistance of mercury. Upon the suspension of the iodide after the melting away of the gummatous mass, a recurrence at the old or an appearance at a new site generally may be expected. Mercury in the form of bichloride should be given in solution with the iodide, or the latter may be given by the mouth whilst mercury is administered by the skin. There are two well-marked peculiarities in the action of the iodide which must be remembered. First is the fact of idiosyncrasy which is more frequently noticed in the case of this drug than in any other remedy. The symptoms of iodism generally follow upon small dosage, and they frequently disappear upon doubling or quadrupling the dose. Now and then one meets with a patient where the drug produces such serious symptoms that it cannot possibly be administered in any way; such cases must depend upon mercury. They are exceedingly rare.

The second point about the action of the iodide is still more important, it effects the question of dosage in a way which is seldom observed in the treatment of disease by any other remedy. I have many times satisfied myself that these gummatous growths will flourish for many months and even years under a certain dose of the iodide taken regularly. Upon markedly increasing the dose a visible result may be obtained in seven or fourteen days and the tumour may disappear entirely in a few weeks. For instance, a patient with a large gumma on the sternum took 20 grs. of potassium iodide daily for six months without the least result; upon increasing the daily dose to 60 grs. all traces of the tumour were removed in three or four weeks. This happens so frequently that it cannot be regarded as a coincidence. It is not observed when mercury is being given at the same time. Hutchinson insists that ammonia should be invariably given with the iodide, and it would be interesting to have the experience of some of the subsequent speakers upon this point. A very important matter is the duration of the iodide treatment in tertiary syphilis, and here a very valuable result may be gained by this discussion. Sir William Gowers maintains that it should never be prolonged beyond a period of six to ten weeks, and he is satisfied that grave danger may follow a further prolongation. Milner states that iodide of potassium, though useful in syphilis, had no curative action whatever. "In overdoses it was almost as detrimental as mercury, patients had their brains and every special sense destroyed, their legs and bellies got fat, and they looked and acted like eunuchs, having no more power than the n." It has been my own practice to give iodide often for four or six months without intermission, and I have never even in full doses seen any serious results, and I have known patients keep up the drug for twelve months without any injury.

It was my intention to dwell upon many important points in the therapy of syphilis, but when I realised the short space of time which was available for the entire discussion I endeavoured to select a few only of the most interesting and practical aspects of the subject, and to bring these before you in the briefest possible way. When, however, I learned from the pages of the British Medical Journal that this Section was to be honoured by a visit from the Section of Dermatology, it became my duty to omit even much of what I had already written, including the interesting side of the treatment of the congenital affection, and it remained for me to put a few points in the shortest and most condensed manner, so that time might be available for those members of both Sections to join in the discussion.

II.—John V. Shoemaker, M.D., LL.D.

Professor of Skin and Venereal Diseases in the Medico-Chirurgical College and Hospital of Philadelphia.

From beginning to end syphilis is essentially one and the same pathological process. The initial lesion is more than a local sore. It is the first outward manifestation of a constitutional infectious disease. I am, therefore, firm in the belief that a patient should be placed upon constitutional treatment as soon as the diagnosis of chancre is made. In most cases the physical characteristics of the sore enable us to make a positive diagnosis. I regard local treatment, in the primary as in the later stages of syphilis, as of less importance than constitutional management. Effective but not too severe cauterisation will hasten repair when considerable ulceration attends the lesion. In many cases black wash is an excellent application. A dusting powder is preferable in most instances. Calomel, acetanilide, bismuth subnitrate, bismuth subiodide, aristol, europhen, iodoform, iodol, and salol are substances which may be used with good result. Excision of the chancre is, according to my belief, unphilosophical, and the practice has been entirely without success. In non-ulcerated chancre no local measures are required. Whatever form the initial sclerosis assumes, it heals more readily and more rapidly when systemic treatment is adopted. We possess remedies for syphilis which approach specific power. If we have reason to believe that we are dealing with syphilis why wait until additional manifestations supervene? The early adoption of general treatment attenuates the virus of the disease, alleviates its symptoms, and may almost be described as prophylactic. A strong argument in favour of early constitutional treatment is the fact that visceral lesions occur in secondary syphilis far oftener than is generally realised. As regards constitutional treatment, mercury is our main dependence. It is often a question as to the manner in which the metal should be introduced into the system or the preparation which should be administered. A mere routine treatment is particularly reprehensible in syphilis Fumigation involves a troublesome arrangement of apparatus, and draws attention to the patient—a circumstance which, in private practice, we must avoid. Inunction is an uncleanly method. In both fumigation and inunction we are unable to regulate the quantity of mineral absorbed, and these procedures are, consequently, more apt to cause ptyalism than when the drug is given by the mouth or thrown beneath the skin. In most cases the ordinary mode of administration by the mouth will be preferred by the patient, and is satisfactory to the physician. The most eligible preparations are blue mass, calomel,

grey powder, the green iodide or biniodide, and the tannate of mercury. The numerous forms more lately recommended possess no conspicuous advantages over the older salts. Calomel is prompt and efficient, but is too apt to excite salivation. As I agree with Mr. Jonathan Hutchinson regarding the importance of minimising the virulence of the disease, so I also have a favourable opinion of the value of hydrargyrum cum creta, and often prescribe it, especially where there is notable disorder of the secretions. Corrosive sublimate is reliable, and is best given in solution. It has the advantage of combining well with iron. The biniodide can be effectively given with potassium iodide, as in the syrup Gibert, and is particularly available in late secondary and in tertiary syphilis. My usual preference in cases seen early is the green iodide of mercury. In vigorous subjects it is serviceably conjoined with small doses (gr. $\frac{1}{48}$-$\frac{1}{24}$) of tartar emetic. If it occasions griping and diarrhœa a fractional quantity (gr. $\frac{1}{12}$-$\frac{1}{8}$-$\frac{1}{4}$) of powdered opium should be added. After three or four weeks the antimonial may be discontinued. The mercurial is gradually increased until it gives some evidence of its physiological effects. It is then either gradually reduced or at once discontinued, and a simple tonic given in its place. The tonic remedies which I employ during this intermission are iron, strychnine, hoang-nan, cod liver oil, hydrastis, or coptis trifolia. Several of these may be given in conjunction. The mercury is then resumed for three or four months, stopped or alternated with a tonic, administered again for several months. At the end of a year, if manifestations of disease are absent, the intermissions are lengthened. By the end of the second year, under this mode of management most cases are cured. The patient's habits should conform to dietetic and hygienic regulations. Tobacco favours the production and continuance of oral lesions. Alcohol is detrimental unless given in medicinal amounts to debilitated subjects, or those habituated to its use. If such a plan is faithfully followed, the percentage of undoubted cures would be much increased. The difficulty is, that many patients, as soon as the tangible evidence is suppressed, abandon medicine and resume their reckless courses.

How rapid and efficient treatment may be under favourable circumstances is shown by the case of a young woman in whom the mode of infection could not be discovered. After suffering for a week or more from excruciating headache, attended toward the last with some fever and delirium, a plentiful macular syphilide appeared upon all parts of the body, including the face. There was a little thinning of the hair. In two week's time under the influence of the green iodide of mercury, the spots were scarcely discernible. In another week

every trace had disappeared, the complexion was pure, the skin rosy and soft. More than four years have elapsed, and there has been no return.

A much more difficult case, because it had reached an advanced stage without its nature having been recognised, is that of a young man who now presents only certain trivial lesions. When I first saw him he was a hideous spectacle. His face was covered with large tuberculous syphilis. The disease had been in existence for more than two years. In that space of time his skin had never been free from lesions; he had ulcerated sore throat, osteocopic pains, and an inflamed eye. He was steadily growing worse, was anæmic, weak, and emaciated. He was first placed upon a mixture containing tincture of coptis trifolia and tincture of xanthoxylum. Subsequently he was given tincture of nux vomica in large doses with fluid extract of hydrastis canadensis. The nux vomica was then discontinued, and the doses of hydrastis increased. The patient gained strength under these medicaments, and his blood improved in quality. He was then given mercury with chalk in 3 gr. doses thrice daily, and, with returning flesh and vigor, the last drug was replaced by potassium iodide. His general condition is now good, he feels well,, and the only evidences of active disease are a small crusted lesion on the upper border of the right ear, and a similar one just within the left nostril. There are a number of small and medium-sized scars upon the face, but they are not very noticeable to a casual glance. Larger cicatrices exist upon the trunk and limbs. Treatment still continues.

For a rapid impression upon the disease I much prefer subcutaneous injections to fumigation or inunction. A soluble salt is, I think, equally efficient and less dangerous than an insoluble preparation. Abscesses and other severe manifestations are liable to follow the injection of calomel. The corrosive sublimate is my choice. In corpulent subjects I inject the solution into the subcutaneous tissue, in thin persons into the substance of a muscle. The solution which I use contains 4 grs. to an ounce of distilled water, and the quantity employed is 5 minims daily, augmenting the dose by a minim every second or third day until improvement occurs or the physiological effect of the drug appears. Lusty patients will safely bear larger doses given at longer intervals.

As syphilis is curable it is no permanent bar to marriage. If a patient can be kept under the constant surveillance which I have outlined he may marry in a year after all syphilitic manifestations have ceased.

III.—J. Nevins Hyde, M.D., Chicago.

Dr. Nevins Hyde thanked Dr. Whitla for his valuable contribution to the subject, and expressed a regret that the limits of the discussion forebade a full exposition of his views. Hutchinson had said that syphilis was an imitator of all diseases. The figure conveyed a suggestion of fact. No competent physician would think of treating tuberculosis, for example, by a routine method. There should be no routine treatment of syphilis. The phenomena of syphilis varied widely. On the one side were the cases which without question terminated formally without treatment. At the other extreme were the cases in which from the first a fatal result was imminent and inevitable. He had seen cases in which a patient died with gummata of liver or brain within a few months after infection. Between those two extremes were to be found the mass of cases in which science achieves its most brilliant results by the aid of mercury and iodine. With respect to the choice of these, the modern expert was to be measured by the degree of his skill in the handling of mercury rather than of iodine. The exhibition of these drugs was often set down as of the first moment in putting away the chances of what the French called *tertiarisme*, but before these should be named the constitution of the patient, his natural vigour and his habits, which were of prime importance. Dr. Hyde heartily commended the recommendation of Dr. Whitla respecting the keeping of a weight chart in all cases.

IV.—Malcolm Morris, F.R.C.S. Ed.,
Surgeon to the Skin Department, St. Mary's Hospital, London.

Mr. Malcolm Morris said he agreed with nearly everything Dr Whitla had said. He thought that sufficient stress had hardly been laid upon the influence of alcohol on the course of the disease. Indeed, as regards the effects of the disease and the influence of treatment syphilis might be divided into those who take alcohol and those who do not. The action of mercury he believed to be an antagonistic one to the syphilitic virus, although its influence on the metabolism also played a part. He commenced mercurial treatment at the earliest opportunity, and regarded an expectant plan during the first stage as time lost. He thought it unwise to lay down arbitrary rules as to the particular preparation, but if driven to one only, he preferred inunction. Intramuscular injections were not so good, although well adapted to individual cases. For inunction he used a preparation of mercury with mollin, and he believed that this method of administration was often greatly helped by the systematic use of stimulant

baths, as at Aix or Wiesbaden. If severe secondary symptoms were present, the mercurial air bath (calomel 15 grs.) was a useful mode of administration, and particularly if extensive ulcerations exist. These severe secondaries often develop after extragenital chancres. Iodine he only gave when the secondaries were assuming a tertiary form, and then not at the expense of the mercury. In the third stage he combined iodides with ammonia to increase their efficacy, and he thought as a vehicle nothing equalled sarsaparilla. Sometimes he found it necessary to introduce the iodides into the food.

V. H. Hervieux, M.D., Montreal.

Dr. Hervieux thought that the discussion on the treatment of syphilis would go on so long as the intimate nature of the syphilis was not perfectly known. The classical treatment, as so ably expressed by Dr. Whitla, was, after all, an empirical treatment, based on clinical observation only. He thought no one would deny that syphilis was a virulent disease, and until the nature of the micro-organism that caused the disease was known, until the circumstances which affected the degree of virulence of this micro-organism were thoroughly studied, the opinions on the means of fighting the disease would vary, at least in the details.

VI. C. W. Allen, M.D., New York.

Dr. Allen said that the treatment would remain much the same, even if the micro-organism of the disease were discovered. The treatment of many diseases of known cause had not been radically changed. He believed that mercurial treatment should be begun as early as possible. No late severe lesions, in his experience, followed by reason of it, as had been taught ; and unless it was begun early valuable time was lost. The fact must constantly be kept in mind that we were treating an individual, and not combatting a disease. The form of drug, the dose, the method, must all be modified. The occupation and mode of life might make injections preferable. He preferred the soluble salt, and found many patients who preferred the injections and inunctions. In many instances the results were brilliant. As to the greater severity of extragenital chancres, while personally he had not found syphilis uniformly or generally more severe after extragenital primary lesions, he thought from the text-book statements and views of observers that such must be the case. He had thought perhaps that the barriers raised by the glands in the groin might account for a lesser degree of severity after genital

syphilis, while in chancre of the finger, for example, the poison became disseminated through the blood to a greater extent before the glands at the elbow and axilla were encountered, in which it could be stored up, so to speak.

VII. L. Duncan Bulkley, M.D., New York.

Dr. Bulkley said that he believed that much of the rebelliousness and seriousness of syphilis from extra-genital lesions was due to the fact that the disease was too often overlooked and untreated, thus giving it opportunity thoroughly to infect the general lymphatic system. In regard to the treatment of syphilis, he wished to emphasise a simple point, and that in regard to the late lesions of the disease. He believed that mercury should be used even to the end—five, ten, twenty years after infection, if there were still lesions present. If mercury were used there would be much less iodide of potassium needed. In other words, the same amount of iodide would produce infinitely more results if a proper quantity of mercury was used at the same time, preferably in combination with it, as in the well-known Ricord's mixture. He believed that lives had been sacrificed by the neglect of mercury late in syphilis.

VIII. D. J. Leech, M.D., F.R.C.P., Chairman.

Dr. Leech pointed out that in the discussion which had taken place there was one feature which deserved notice. No other remedies for syphilis had been alluded to except mercury and the iodides. The antisyphilitic power of the numerous drugs, such as sarsaparilla and guaiacum, once regarded as curative agents in syphilis, had been ignored, and the negative unanimity of the speakers seemed to show that faith in them had passed away amongst those best able to give an opinion concerning the treatment of syphilis, even though one of them—sarsaparilla—might still be regarded as a useful vehicle. To clear the ground of the many substances still ticketed in books as "antisyphilitics" was a step onwards in therapeutics. It was interesting to observe that the verdict of practical experience with regard to sarsaparilla coincides with the inferences to be drawn from its pharmacological investigation, which shows that the drug contains no active ingredient except a saponin-like substance analogous to that present in senega and quillia bark, the only effect of which is to stimulate the gastro-intestinal mucous membrane; fortunately the mucous membrane seems incapable of absorbing this active principle, which otherwise would exert an evil influence on the circulation. It

is quite possible that its stimulant action on the mucous membrane may be the cause of sarsaparilla being useful as a vehicle. Most of the main principles relating to the treatment of syphilis, which Prof. Whitla had laid down in his very able paper, had been acquiesced in by the speakers who had followed him. Some of the points debated, such as the time at which the use of mercury should be commenced, would probably only be finally settled when our knowledge as to the nature of the action of mercury was much more advanced than at present. And with regard to this, it might be pointed out that whilst the idea that mercury acts not directly but by causing the production by the tissues of some material analogous to an antitoxin, is only a suggestion calculated to lead to further experiments, it does not seem, that is, as one speaker had suggested, the utility of mercury applied locally is opposed to this idea ; for if mercury, when introduced into the system, causes the production of an antitoxin, it may do so at any part to which it is applied, if the issues reacting with it are present there. There were only two other points, the Chairman said, to which he would venture to refer. The first was that of the dosage, He did not think it possible to lay down any rule with regard to the amount of mercury or iodide to be given. Each individual had his peculiarities, which could only be ascertained by trials. The drugs should be pushed until they produced a good effect, or such a physiological action as to prevent their continuance in full doses. This was especially the case with iodide of potassium He had recently seen a case in which both mercury and iodide failed to do good until the latter was given in 60-gr. doses three times daily. The second point related to possible evils arising from the use of mercury in ordinary doses. In some ailments less fear is now entertained than formerly of moderate doses of mercury in syphilis, but where there was a tendency to ulceration evils sometimes followed its use. Especially is this the case in syphilitic ulceration of the soft palate. Ricord pointed out that in these cases the use of even small doses of mercury seemed to promote the perforating process.

Case Reports.

REMARKS ON A CASE OF PARANEPHRITIC ABSCESS, WITH RUPTURE INTO THE STOMACH.

BY

ALBERT G. NICHOLLS, M.A., M.D.,

Assistant Demonstrator of Pathology in McGill University; Assistant Pathologist to the Royal Victoria Hospital, Montreal.

Nephrolithiasis; pyonephrosis; para-nephritic and retroperitoneal abscess; rupture into stomach; gangrene of spleen and pancreas; acute hepatitis and portal pylephlebitis; acute suppurative colitis; right acute parenchymatous nephritis; left empyema and collapse of lung; pure culture of B. coli from abscess.

The case which I have an opportunity of recording, through the kindness of Prof. James Bell, presents several features of clinical interest, and in regard to its termination, namely discharge of a large para-nephritic abscess through the stomach, must be regarded as being of the greatest rarity, if not indeed absolutely unique.

Mrs. J. R., æt. 30, was admitted to Dr. Jas. Bell's wards at the Royal Victoria Hospital, on July 20th, 1897. Her illness began in May, 1896, with a dull aching pain in the left lumbar region which was felt into the left axilla, and was only relieved by assuming a dorsal or left lateral position. Prior to her admission there were one or two intermissions for a fortnight or so, but when present the pain was fairly constant. About June of 1897, she further began to suffer from an attack of sharp, continuous pain in the left groin, which lasted three days, being most marked at night. This was accompanied by nausea. A week later she had a similar attack, associated with fever and sweating, which lasted for a week. Between June 20th and 30th, she had five rigors with profuse sweating. For about a year the patient had noticed that her urine contained a white ropy sediment, and became thick and greenish. There was neither pain on micturition, frequent passage of urine, nor hæmaturia.

Personal History.—The patient had the usual diseases of childhood; 12 years previously she suffered from pneumonia on the left side. In January, 1896, she gave birth to a child 3 weeks premature. Before delivery and after she had several convulsions. There was no history of renal colic.

Family History.—No inherited taint.

Condition on Admission.—The patient was emaciated and anæmic, with slight sub-icteroid hue of the sclerotics. She complained of a dull aching pain in the left lumbar region, which was aggravated by lying on the right side and associated with a dragging sensation in the left loin. In the left side of the abdomen was a large fluctuating tumour which extended vertically from a line one inch above the umbilicus to the 5th rib in the mammary line, and laterally to a point two inches to right of median line, shading off posteriorly. The tumour was most prominent in the epigastrium, was dull on percussion, and the dull area was not movable. The flanks were clear. Slight pulsation in the left intercostal spaces was noted, synchronous with the heart impulse. This dulness merged off insensibly into the liver and heart dulness, and posteriorly, was continuous with a dull area on the thoracic wall. This area on percussion gave an impaired note from the 6th to the 7th interspace, and then an absolutely flat note from that point to the base of the lung merging at that point into the tumour dulness. In the left loin posteriorly the subcutaneous tissues were distinctly boggy and œdematous.

The accompanying figures show very well the extent of the dull area.

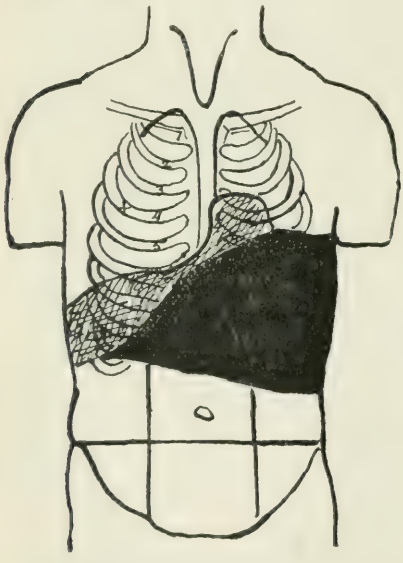

Fig. I. Front View.

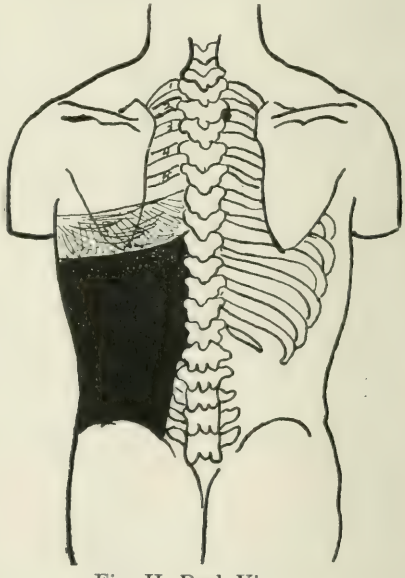

Fig. II. Back View.

In fig. 1, the stippled portion represents the liver and heart dulness; in fig. 2, the area of relative dulness over left lung.

Above the level of the 6th rib posteriorly, the note was hyper-

resonant. From the apex to the 7th rib the breath sounds were harsh and expiration prolonged ; over 7th and 8th ribs blowing breathing was heard, and below this point the breath sounds were only faintly audible. There was no cough or expectoration. The movement of the diaphragm on the left side was much impaired. Right lung normal. The impulse of the heart apex was diffuse, being palpable in the 3rd and 4th spaces. The vertical cardiac dulness was not increased, but the right border of heart dulness began at the mid-sternal line. No murmurs.

The urine was acid, of a rich amber colour, turbid, sp. gr. 1020. The deposit was slightly flocculent consisting of pus, hyaline and granular casts, and a few red-blood corpuscles. A decided trace of albumen was present. No sugar.

On July 22nd the chest was aspirated in the 9th interspace about the posterior axillary line and thick pus and bloody fluid were obtained. A resection of portions of the 9th and 10th ribs was performed and the pleural cavity opened. The lung was felt about a finger's breadth above the incision. A small amount of clear fluid came away. In the diaphragm was a small puncture, evidently made by the exploring trocar, and through it pus was oozing. The incision was enlarged upwards and the visceral and parietal layers sutured together. An incision was made through the diaphragm and pus was seen coming from the region of the left kidney. The wound was packed with gauze and dressed, it being intended to open into the loin later.

July 23rd, The dulness over the lung posteriorly had largely cleared up, but swelling in the epigastrium was still prominent.

Aug. 7th. Swelling in epigastrium was distinctly smaller and patient vomited about 2 ounces of thick brownish fetid material.

Aug. 8th. Swelling over epigastrium was absent and the note tympanitic. Vomited again. Material examined microscopically gave the appearance of broken down pus.

Aug. 9th. Great nausea. Involuntary stools.

Aug. 10. Delirious. Involuntary, tarry, stool. Vomited blood-stained fluid and one small clot. Death.

Autopsy.—Twelve hours after death. (Performed by A. G. N. and H. K. Wright).

Body that of a young female, with usual signs of death. Great emaciation. Post-mortem rigidity complete. Considerable lividity. On opening abdomen, muscles were small ; subcutaneous fat absent. A small amount of clear fluid was present in the pelvis.

Right Lung—Pale and crepitant throughout. Lowest lobe adherent posteriorly.

Left Lung—Upper lobe generally adherent with old adhesions. Lower lobe completely carnified. Surface covered with flakes of purulent lymph. The diaphragm

was blackened and infiltrated. The left pleural cavity contained about eight ounces of mixed pus and blood.

Heart.—Muscle pale.

Spleen.—Weight 255 grammes. Adherent posteriorly and to diaphragm with recent loose adhesions. The inner lower surface was covered with purulent lymph, and in lower angle was an area of necrosis, the size of a filbert, with purulent broken down walls, but with an attempt at a pyogenic membrane. The spleen pulp was soft and congested.

Right Kidney.—Cortex pale and fatty looking, and swollen. On section, pale and flabby. Pyramids not well defined from cortex. Acute nephritis.

Bladder—Distended and slightly congested.

Liver—Weight 1055 grammes. On section pale, friable and fatty. Left lobe shewed condition of acute suppurative hepatitis and also suppurative portal pylephlebitis.

On examining the left side of the abdomen a large pus collection was seen to the inner side of the kidney. This was bounded above by the spleen, the diaphragm, and the cardiac end of the stomach, was walled in by fairly firm adhesions at the median line, and extended downwards to about the middle of the left kidney. The lower portion of the abscess on the right side was bounded laterally and slightly anteriorily by the descending colon, which was fairly firmly adherent.

Intestines.—The portion of the descending colon, bounding the abscess cavity, presented greatly thickened walls, with diffuse suppurative infiltration, but no perforation. It contained blood-stained clotted contents.

Stomach.—About half filled with mixed pus and blood. At the dependent part of the cardia, close to the spleen, was a circular perforation about 10 mm. in diameter. That this was due to perforation from outside the organ was evidenced by the fact that the erosion was of the shape of a short truncated cone with terraced walls, the base being towards the serosa and widely eroded, while the opening in the mucosa was much smaller, the infiltration less and the mucosa freely moveable, with sharp edges. The mucous membrane showed a condition of diffuse acute inflammation.

Pancreas.—The tail of the pancreas was contained in the abscess cavity ; part of it had sloughed off and the rest was necrotic and gangrenous. The head was apparently normal.

Further examination showed that the peri-nephritic abscess was a direct extension of a large retro-peritoneal pus collection, which had burrowed from behind the left kidney upwards into the diaphragm and downwards along the ilio psoas to a point one inch below Poupart's ligament where it presented, laying bare the iliac vessels. The retro-peritoneal glands were generally enlarged, but not suppurating.

Left Kidney.—Was double the normal size, being converted into a pyonephrotic sac, distended with thick creamy greenish pus. At the proximal end of the ureter was a calculus the size of a small hickory nut, but not impacted. About 20 smaller calculi were found in the calices. Posteriorly the kidney was necrotic, but there was no direct communication between the pelvis and the retroperitoneal tissues.

Cultures from the pus gave pure growths of the colon bacillus.

To sum up, then, in this case we were dealing with a large fluctuating tumour in the left kidney region, associated with spontaneous and elicited pain, the boundaries indefinitely palpable, accompanied by hectic fever, rigors and sweating, œdema of the subcutaneous tissues in the left loin posteriorly, pus and casts being present in the urine. On exploratory puncture pus was found coming from region of the kidney, and shortly before death vomiting of purulent and blood-stained material occurred. Significant also was the fact that coincident with the vomiting of broken down purulent material, the prominence in the epigastrium disappeared.

In the presence of these symptoms and physical signs it was hardly possible to escape the conclusion that a peri- and para-nephritic abscess was present, which had ruptured into the stomach, although from what source arising it was not so simple to decide.

In such a case so many nice points in the differential diagnosis come up that it may not be without interest to briefly refer to them.

When a fluctuating tumour is present in the kidney region it has to be determined, first, whether the tumour is formed of a distended kidney simply, such as would occur in hydronephrosis, a pyonephrosis, simple or tubercular, a congenital cystic kidney, or an echinococcus cyst; secondly, a paranephritic abscess associated with suppuration in the kidney itself, as in pyonephrosis and nephrolithiasis, tuberculosis, and embolic suppurative nephritis, a suppurating carcinoma of kidney, suppurating echinococcus cysts, or actinomycosis; thirdly, a para- or perinephritic abscess arising from a source outside of the kidney, such as traumatism, perforative appendicitis and perityphlitis, caries of the spine, empyema, and rarely liver abscess.

The first group of cases are characterised by a more defined and bounded tumour mass of rounded form, without involvement of the abdominal wall and skin. Where the kidney is much distended the colon may often be made out crossing the tumour in front diagonally. Such tumours are not movable. Here the pleura would not be involved.

In doubtful cases the more circumscribed the tumour is, the more it speaks for kidney abscess, especially if there is no œdema of the parietes. When deep-seated suppuration is present the mass at first may be hard, resistent and indurated, later elastic, and finally, as the abscess increases, fluctuation may be made out, especially if the tumour is palpated with one hand in front and the other in the loin behind.

Having thus decided that a para- or perinephritic abscess exists, it is necessary to discover its origin. A careful examination of the spine should be made for points of tenderness or pain on movement to eliminate carious disease. Until secondary infection sets in such cases run along without fever, or when present it is slight and continuous. Psoas abscess arising from paranephritic suppuration occurs very late in the course of the disease, and is never so prominently to the fore as in the case of psoas abscess from caries. In the latter, too, the pain and the tumour are much more marked at the region where the pus presents. When empyema is the cause this can usually be easily differentiated from the history and the presence of a pleural effusion early in the disease.

Appendicitis and paratyphlitis only come into mind when the

tumour is on the right side. The history of these cases is of great value, and the position of the abscess at first is so different from that in paranephritic abscess that it is not very difficult to decide. Later on, however, it may be impossible. In a paratyphlitic abscess fluctuation is felt deeper down, and a slight tympany may be felt over the dull area on light percussion.

Liver abscess bursting into the peritoneum is a rare event. Such abscesses may be suspected from a history of pain over the liver, with or without enlargement, with or without icterus, and with rigors, sweating and a remittent or intermittent temperature curve, especially if we can establish a cause, such as tropical dysentery, traumatism to liver or cranium, gastric ulcer, typhlitis, gangrene of lung or malignant endocarditis.

We are justified in diagnosing paranephritic abscess if the following are present: pain in kidney region, either localised or radiating, intermittent fever, a fluctuating tumour in the loin with *œdema and reddening of the neighbouring abdominal wall*, and possibly pain on contraction of the psoas muscle. If the colon is involved, melæna may be present.

When there is any doubt as to whether pus exists, a puncture with a trocar is indicated. In this connection, it might be mentioned that a retroperitoneal lipoma or lipo-myxoma may cause a fluctuating mass in the kidney area. This usually grows very slowly, without fever, and attended by simple emaciation without cachexia. It can often be felt to be lobulated and is generally crossed by the colon, and, when punctured, no fluid can be withdrawn.

Having determined that the abscess is associated with a gross lesion of the kidney, it remains to differentiate between the various conditions before mentioned.

Actinomycosis and echinococcus cysts are so rare in this country as hardly to deserve discussion. An examination of the contained fluid will usually tell.

Carcinoma is also rare. This gives rise to a hard tumour, with perhaps soft areas to be felt in it. Metastases should be looked for, the cancerous cachexia and an exploratory puncture may decide its nature.

The vastly more important conditions to be discussed are nephrolithiasis and tuberculosis.

A history of renal colic is, of course, significant, but is often absent, as in the present case. In rare cases a stone might be felt on palpation or on exploratory puncture. The X rays might also reveal the presence of a calculus.

Tuberculosis of the prostate, vesiculæ seminales, testes, epididymes, ovaries, tubes and bladder should be looked for, as some of these lesions are almost invariably present in tubercular pyonephrosis. A careful search for tuberculosis in the lungs should also be made.

The most important information is obtained from the examination of the urine. The points to be looked into are the reaction, the presence of pus, blood, gravel, fragments of tissue, and presence of bacteria.

In suppurative nephritis the reaction is at first acid, but may become alkaline. Schmidt and Aschoff found that when the B. Coli was present alone, the urine did not become alkaline, but this only occurred when other bacteria, such as staphylococci, were present either alone or associated with the colon bacillus.

The amount of albumen is always small depending upon the presence of the contained pus. Casts are usually absent, but may be found. Blood is almost always present. A sudden discharge of pus into the urine may be due to the rupture of a small abscess into the pelvis of the kidney, a sudden dislodging of a plug in the ureter, or the rupture of a peri-nephritic abscess into the urinary ducts. Rarely portions of kidney tissue may be recognized.

The urine in pyelo-nephritis does not differ much from the last case, but we may expect to find kidney epithelium and sometimes casts, in addition to pus and blood.

To distinguish kidney-abscess from a suppurative pyelitis is not always possible, as in both a sudden discharge of pus into the urine may occur. The presence of casts and kidney tissue would suggest the former condition.

The urine in para-nephritis, of an origin extraneous to the kidney, is normal, except in the case where the abscess bursts into the pelvis of the kidney. In the latter event the urine is for a long time free of pus ; pyuria only occurs late on in the process.

In a para-nephritis resulting from pyelitis, pyelo-nephritis, or tuberculosis of the kidney, pus is of course present.

The urine of congenital cystic disease is that of chronic interstitial nephritis.

The urine in hydronephrosis may be normal, or there may be a sudden increase in the amount of urine associated with a corresponding decrease in the size of the tumour (intermittent hydronephrosis). Such urine is of low specific gravity and usually contain a small amount of albumen, with epithelial elements derived from the pelvis.

When nephrolithiasis is present, the urine is almost always acid The presence of gravel or small urinary calculi is conclusive if associated with colic. Bloody pus and epithelial cells are also present.

As renal colic can be caused by the passage of other bodies besides calculi, one would not be justified in diagnosing nephrolithiasis from hæmaturia, colic, and signs of pyelitis, unless concrements were found in the urine as well. To exclude vesical calculus, the character and localisation of the pain is suggestive, being usually not confined to one side as in nephrolithiasis. The reaction is of no importance, as alkaline urine can be found in stone in the kidney. Examination with the sound is necessary. Also in nephrolithiasis the pus is mixed with the urine as it flows, while in cystitis it is mostly passed at the end of the act of micturition. Catheterisation of the ureters will often give important information.

In tuberculosis of the kidney the urine is acid, cloudy, contains albumen, and the sediment consists of pus, blood, epithelium and detritus. Sometimes shreds of tissue and elastic fibrils are found. A certain means of differential diagnosis is only at hand in the recognition of the tubercle bacilli in the urine. A few isolated bacilli may be found in miliary tuberculosis of the kidney, but this is rare, and the rule is that even in widespread tuberculosis elsewhere the urine is free, unless the kidneys are the seat of a diffuse caseous process. We are only justified in diagnosing the latter condition, if after repeated examination of the urine, the bacillus of tuberculosis is constantly present. With respect to the technique of this examination, I might refer to an important practical point, the differentiation of the tubercle bacillus from smegma bacillus. Our experience at the Royal Victoria Hospital, based on the investigations of Dr. C. B. Keenan, is in accord with that of Grünbaum, who found that in the majority of urines taken from all cases, the smegma bacillus was present. In the urine of females this bacillus was present oftener than in that of males. Also in catheter specimens it was almost always absent. The method of staining is of great importance. Both the smegma and the tubercle bacillus stain by Gabbett's method and can scarcely be differentiated under the microscope. A point of difference lies in the fact that the smegma bacillus is decolorized by absolute alcohol while the tubercle is not.

The simplest method is to stain in the usual way with carbol-fuchsin heated over the flame and then to differentiate with a saturated alcoholic solution of methylene blue applied for five minutes. By this method (Weichselbaum's) only the tubercle bacilli are stained. So that by using catheter specimens and staining by this method we have a certain means of determining the presence or absence of the B. tuberculosis.

With a careful attention to the history, and an examination on the

lines previously indicated, a diagnosis can often be made, but in the absence of one or more of the leading factors it may be impossible to do so. A careful and repeated examination of the urine should be made, and where deep seated suppuration is suspected, exploratory puncture is indicated. Among the more remote signs of a burrowing abscess in the retro-peritoneum may be mentioned paraplegia, neuralgic pains in a limb, anæsthesia, and thrombosis of the iliac vessels.

With regard to the etiology of abscesses in the kidney region, it will be gathered from what has been already said that many factors come into mind as the exciting cause of the condition. But besides those mentioned, a few of the so-called primary cases have been found to be sequelæ of the infective fevers, notably typhoid, scarlatina and smallpox; a few are said to be due to exposure to cold. By far the most frequent cause, however, of the primary cases is traumatism, from falls, crushing, wounds, &c. In many cases, however, no cause can be assigned.

The most complete discussion of the subject which I have met with is an article by G, Nieden (*Deut. Arch. f. Klin. Med.*, Bd. XXII., s. 451). Unfortunately owing to the fact that Koch's discovery of the tubercle bacillus was not then published, the cases cited are likely to be misleading, inasmuch as the conditions of suppurative nephritis and tuberculosis, regarded as etiological elements, are probably often confused.

Nieden tabulates in all 166 cases which he was able to collect from the literature previous to that time (1878) and gives particulars of 6 other cases.

Traumatism was put down as the cause 26 times; suppurative nephritis (pyelonephritis), 21 times; nephrolithiasis, 14; exposure to cold, 11; unknown cause, 24; caseous renal tuberculosis, 3.

Among the rarer causes were pyelitis 6 times; echinococcus, 4; strongylus gigas, liver abscess, suppurating cysts, cholelithiasis, abscess of ligamentum latum, and caries of spine, 2 each; typhoid, carcinoma, perforation of colon ascendens, of colon descendens, perforation of cæcum, and perityphilitis, once each. Of the remaining cases the cause was doubtful.

Owing to the loose cellular tissue about the kidney the abscess is usually single, of large extent, and often develops rapidly. In a few cases, usually pyelitis or pyelonephritis, multiple small abscesses develop and may fuse or undergo spontaneous absorption, in the latter case resulting in fibrosis and contraction of the affected area. When operative interference is not resorted to early, the abscess burrows in the retro-peritoneal tissue and usually points either in the loin or at

Poupart's ligament. Rarely it presents below the gluteus maximus, between the biceps and sartorius, or at the inguinal ring. Perforation into the cavities of the body and other hollow viscera occurs less frequently. Perforation into the colon is the most frequent and a relatively happy result with regard to care. In Nieden's series it occurred 13 times. Duffin regards it as a more common event even than external rupture.

Rupture into the pleural cavity is the next commonest event, being noted in 8 cases. If the lung is adherent to the diaphragm the pus may discharge through a bronchus. This occurred 7 times. Perforation into the peritoneal cavity is excessively rare, occurring only 4 times. This is due to the fact that abundant limiting adhesions are usually formed

Perforation into the urethra, bladder and vagina occurred in one case each.

Perforation into the stomach, mainly on account of which the present case is placed on record. seems to be unknown. It did not occur in any of Nieden's series. Rayer, indeed, mentions it as occurring, but Nieden states that he did not meet with any example of it recorded.

A careful search through subsequent literature has failed to reveal any such, so that we must conclude, at least so far as our information goes, that the case here recorded is unique.

BRONCHIECTASIS TERMINATING IN PNEUMONIA, SIMULATING PULMONARY AND LARYNGEAL TUBERCULOSIS.

BY,

F. G. Finley, M.D.,

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C. O., male, æt. 19, was admitted to the Montreal General Hospital on February 23, 1897, complaining of cough, loss of flesh and spitting of blood.

He had measles and whooping cough in childhood, and since the age of 8 years has suffered from cough, which has continued with more or less severity since. In September last it became worse, and he began to lose flesh. In January he suffered from a pain in the left side, which was extremely severe and catching at first, and lasted eight or ten days. On the day previous to admission, he spat up two or three drachms of clotted blood, and a little later a small quantity mixed with sputum.

Examination.—The patient is of medium size, fairly nourished, and not anæmic and the temperature normal. There is a slight lateral curvature of the spine, the convexity being to the right in the dorsal region. The right side of the chest is rather larger, measuring $16\frac{3}{4}$ to 18 in., whilst the left is only $15\frac{3}{4}$ to 17 in. The percussion note is slightly dull on the left side in front and in the axilla, whilst it is hyper-resonant over the right lung. The breath sounds are slightly feeble over the dull area, and there are here a few scattered single crepitant râles.

The heart is of normal size; a harsh systolic murmur is present in the pulmonary area, but there is no pulmonary accentuation, There is also a systolic murmur in the left supra-clavicular area. Until February 28th the expectoration was small in quantity, the temperature did not rise above 99°, and there was slight sweating.

On February 28th the temperature rose to $102\frac{1}{2}$, the cough became severe and the expectoration copious, and a few days later extremely fetid.

From this time there was a steady downward progress. The temperature was remitting, rising from 102° to 104° at night and falling to 99° and 101° in the morning. He became pale and lost about three

lbs. weekly in weight. The expectoration increased, varying from 8 to 14 oz. daily, continuing extremely offensive. Profuse sweating was also noted. Coarse crepitant râles developed on both sides, and on March 12th, there was a dullness from the 4th to 6th rib, and in the lower axilla on the right side. Blowing breathing and bronchophony were present over the dull area. Evidence of consolidation ultimately spread over the whole posterior surface of the right lung.

Dr. Birkett examined the throat and reported marked anæmia of the soft palate and atrophic rhinitis and superficial ulceration of both the cords.

The sputum was examined repeatedly for tubercle bacilli, but they were never present.

Marked prostration of strength, slight wandering, and, on the night of his death (April 3), wild delirium preceded the fatal issue.

Autopsy—Performed by Dr. Wyatt Johnston, April 4, 1897.

Anatomical Diagnosis.—Chronic putrid bronchitis and bronchiectasis with multiple dissecting pneumonia; great enlargement of bronchial glands; chronic catarrhal ulceration of larynx; cloudy swelling of kidney.

Somewhat emaciated young man.

Rigidity present in all parts; lividity slight.

Abdomen.—Well marked anæmic areas over surface of liver; organ shows some furrowing on the surface; veins lying at bottom of these furrows.

No evidence of gummata.

Microscopic examination of liver tissue shows nothing special.

Spleen—Large, rather soft, one accessory spleen size of a cherry.

Kidneys—Large, moderately injected, typical cloudy swelling, but little opacity on M. E.

Intestines—Show nothing special.

Stillate injection along rugæ of the stomach.

Thorax.—Universal adhesions of both sides.

Left lung.—650 grams, partly collapsed, on separation greatly injected; a few consolidated areas; bronchi much dilated, with thickened walls; fœtid yellowish-brown contents.

At base some consolidation irregularly distributed, but always in the vicinity of the small pocket containing the grumous fœtid material just mentioned. It is difficult to establish whether these pockets result from necrosis or bronchial dilatation.

Bronchial glands enlarged to size of walnuts, gray, succulent, soft and œdematous.

Right lung.—1820 grams, greatly enlarged, practically solid throughout, and very heavy; pleura adherant throughout; pleural surface studded with grayish yellow elevations resembling tubercles, but seem to be collections of yellowish pasty matter in minute cavities. Similar pockets filled with pasty matter are distributed through the lung, involving greater portion of the tissue. On washing the surface these stand out as small rounded sacs with shaggy inner walls, not showing granulation tissue or lining membrane, though often surrounded by firm, indurated areas.

On microscopic examination these spaces show no signs of tubercles, and are lined by altered, and to a large extent, necrotic epithelial cells, which are large and loaded with fat granules, and have a somewhat villous arrangement like hypertrophic epithelium in bronchiectatic cavities. The interior of the cavities consists almost entirely of cells; shows little or no elastic tissue. The intervening space between

the small cavities shows extreme consolidation, with thickening of the walls of the alveoli and some fibroid change. Contents of cavities show no tubercle bacilli.

Trachea and bronchi show a rough, reddened, thick mucosa.

Larynx at posterior angle shows two round ulcers with undermined areas. No sign of tubercle.

Bronchial glands unite, and form a mass as large as an apple, almost diffluent in places.

Microscopic examination of glands shows no cells except various leucocyte forms.

Heart—Valves reddened; coronaries free; substance healthy.

Brain—Vessels filled. Otherwise nothing special.

Testes, nothing special.

The course of the disease was thus a chronic bronchitis and bronchiectasis, terminating in fœtid bronchitis and septic pneumonia. The relation of the onset of the disease to whooping-cough and measles could not be determined, as the patient was unable to fix the dates at which he suffered from these maladies.

The clinical resemblance to tubercular pneumonia was very close; the sweating, remitting temperature and prostration, the extensive spreading consolidation of the lungs, the ulceration of the vocal cords, are all features which are familiar in such a condition. The result of systematic examination of the sputum was, however strongly against such a conclusion and pointed to a non-tubercular consolidation.

IRRITATIVE TRISMUS.[1]

BY
J. ALEX. HUTCHISON, M.D.,
Surgeon to the Montreal General Hospital.

G. M., aged 23, was admitted to the Montreal General Hospital Dec. 28th, 1897, complaining of difficulty in opening the mouth.

Personal History.—When three years of age fell from an upper window and has had epileptic fits at intervals since. The fits have been much more severe and frequent during the last year, usually at night, and as many as three attacks in twenty-four hours. Had used liquor occasionally to excess. Nothing of importance in the family history.

Present Illness.—About twelve months ago, while eating breakfast a peculiar creaking sound was noticed on opening the jaw. He had suffered from several severe fits during the previous night. This condition was present on entrance to the hospital. In February of 1897 an abcess developed in the right cheek. At this time he was taken to the Verdun Hospital. Had great difficulty in taking solid food owing to the fixation of the jaw, and lived largely on milk. He is now able to separate the teeth about one inch, but each movement is with pain.

Present Condition.—Mental condition is fair, but has from one to three epileptic seizures a day. On examination of the mouth the condition as above described is noticed, with the partial dislocation or a slipping forward of the right fibro-cartilage. If the lower jaw is held firmly the mouth opens in a fairly normal manner and no sound can be heard, but the pain on moving still exists. There is a sinus leading down to the alveolus of the last molar on the affected side. There are a large number of badly decayed teeth. Ether was administered and Mr. J. S. Ibbotson removed a number of these teeth, after which I made a careful examination but could detect no abnormality about the articulation on either side; the lower jaw could be freely moved. The following day the patient was able to open his mouth in a natural manner without pain and without noise, and continued to do so for a week when, on coming out of the bathroom, he was taken with a seizure, and when he awoke the old condition had returned. He complains of some spicules of bone or portions of teeth causing great pain. I propose administering ether again with a view to removing these.

Notes from the case report of Dr. Chas. Gurd.

[1] Read before the Montreal Medico-Chirurgical Society, January 21st, 1898.

APPENDICITIS IN A CHILD.[1]

BY

J. Alex. Hutchison, M.D.,

Surgeon to the Montreal General Hospital.

S. P., aged 2 years and 6 months, was admitted to the Montreal General Hospital, July 3rd, 1897, suffering from acute appendicitis. Two days before admittance the mother noticed that the child appeared to be suffering acute pain, would suddenly stop playing and begin to cry. There was some vomiting and diarrhœa. This continued, and on the third day the child was seen by Dr. Geo. Berwick, who diagnosed the condition and advised operation. I examined the patient in the evening, and in the absence of any immediate symptoms of danger I postponed operation till the following morning. At the operation a gangrenous appendix with a large perforation at the distal extremity was found in a large cavity well walled in, which was full of pus and involved the pelvis. After excising the diseased tissues and wiping out the cavity, it was packed with iodoform gauze and a large tube was placed in the wound. After operation for a time the patient had a high temperature and considerable abdominal distension. The following day the general condition was improved. Dr. Elder, in my absence, under chloroform, returned a hernia of the intestine through the incision, partially closed my wound, and carried in a rubber tube through a posterior opening. The case made an uninterrupted recovery from this time. So far as I have been able to learn, this is the youngest case successfully operated upon with recovery, and for this reason consider it worthy of bringing to your notice. In addition, it is not generally thought that children of this age suffer from this condition, one which could be easily overlooked without a careful abdominal examination. I can recall one case of a child, not very much older, who died some years ago of general peritonitis. His case was under my observation from the beginning of the attack, and I was aided by the advice of the late Dr. R. P. Howard, but I allowed the child to die without further treatment than the use of opium.

Notes from the case report of Dr. F. R. Wainwright.

[1] Read before the Montreal Medico-Chirurgical Society, January 21st, 1898.

RETROSPECT

OF

CURRENT LITERATURE.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

The Serum Treatment of Syphilis.

La Sémaine Medicale, April and June, 1895.

British Medical Journal, June, 1895.

Lancet, 1895.

Journal of Cutaneous and Genito-Urinary Diseases, 1895.

During the past seven years not a few observers have directed their attention to the treatment of syphilis by the use of blood serum. While syphilis is curable in the ordinary sense of the word, in a large majority of cases, by the intelligent use of the mercurial and iodine treatment, there yet remains a certain number which resist the best directed attempts at cure by the ordinary means. The fact that such cases occur lends considerable interest to any new method by which they might be combatted.

The first attempts of the kind were made in 1891 in Prof. Fournier's wards in the St. Louis Hospital in Paris, dog serum being employed for the purpose. Several investigators soon afterwards repeated the experiments made in Paris, and the same result was practically obtained in all, viz:—improvement in the general strength, diminution of anæmia, and a more rapid amelioration in the specific lesions.

After having tested the value of dog's serum in tuberculosis, Feulard turned his attention to its use in syphilis. He found that its beneficial action was shown principally in an increase in weight and in its general tonic action on the system. In one case in particular where the usual remedies had proved quite ineffectual, when administered in conjunction with doses of serum, a rapid and complete cure followed. He advises the use of a solution of bichloride of mercury

in serum (1-2000), from one to four drachms being given at a dose. The administration of serum in addition to ordinary specific treatment proved of great service in two cases reported by Richet and Héricourt. The first was that of a woman infected ten years previously by her husband and who showed signs of beginning locomotor ataxia. She suffered particularly from lightning pains. Specific treatment had had absolutely no effect upon her condition, but after three injections of medicated dog's serum (6 cc. at a time) considerable improvement set in with disappearance of the pain. The second case was that of a young woman who had numerous specific ulcers upon her limbs which had resisted ordinary treatment. Daily injection for one week of from 1 cc. to 3 cc. of prepared serum practically effected a cure. The patient also gained in flesh and lost her anæmia.

C. Pellizzari adopted another procedure in his investigations. He injected serum taken from syphilitics in the tertiary stage into those suffering from primary or secondary syphilis. Theoretically, such a method would have much to recommend it, but in practice it did not prove a success. He treated a large number of patients in this way, and although for a time the manifestations of the disease appeared to be lessened, the subsequent course of the syphilis was not materially altered.

Richet and Héricourt, Gilbert and Fournier, have further extended their investigations to the artificial immunization of some of the lower animals. They were immunized by being given injections of serum obtained from patients in the second stage of the disease. The first case was that of a woman with persistent ulcerating gummata. Injections of 12 cc. of serum obtained from an immunized dog were soon followed by cure, which however did not persist, the gummata again ulcerating. The second case presented the symptom of locomotor ataxia, the woman having been syphilitic for some twenty years. The patient received 6 cc. of immunized serum within a week and as a result, the nocturnal headache, gastralgia, vomiting and lightning pains disappeared. In the third case, the cure of three ulcerating gummata which had resisted ordinary treatment occurred within four weeks.

Gilbert and Fournier have conducted an extensive series of investigations in the immunization of the lower animals. In a first series of animals, they injected blood taken from a patient suffering from secondary syphilis; in the second series, a she goat was inoculated within two months with nine syphilitic chancres, and in the third series, a dog was inoculated with four chancres, two papules and 120 grams of blood. The effects of either substance appeared to be about

the same, for both success and failure attended the employment of all three kinds of serum indifferently.

The patients treated were divided into two groups ; those who had been or who were being treated in the usual manner and those who had not been subjected to treatment of any kind. In the first group, the injection appeared to have a beneficial effect, particularly in two cases (out of seven) where a most marked and rapid improvement set in. In the second group, some patients were benefitted, others apparently being unaffected. In all, ten cases were treated by injection, and of these, five derived considerable benefit from the use of the serum.

It is difficult to appreciate how much the serum of the animals treated by inoculation was made more curative, since previous investigations have demonstrated the beneficial effect of the unmedicated serum.

Other methods based more or less upon the same lines as those already mentioned have been tried by different observers, and with varying results. So far as serum therapy is concerned, investigators are confronted at the outset with the difficulty of our ignorance concerning the pathogenic micro-organism of the disease and its method of cultivation. The occurrence of cases of a malignant type, however, those which resist medication, will lend an interest to any new method of staying their progress.

E. J. Semple.

Pharmacology and Therapeutics.

UNDER THE CHARGE OF A. D. BLACKADER.

On the Treatment of Whooping Cough.

THEODOR F. "Die Behandlung der Keuchhousten."—*Archiv für Kinderheilkunde*, Bd. xxiii, 4-5.

DOLAN, THOMAS M. "Pertussis,"—*Pediatrics*, January 1st, 1898.

Both these writers consider that in the treatment of this troublesome affection we can accomplish little more than palliation of the symptoms. Theodor, after trying all the vaunted specifics, has gone back to his old way of treating the disease, and employs for children under a year old, antipyrin; for those between one and two years old, bromoform; while for older children he prescribes the wearing of a mask wet with a ten or twenty per cent. solution of carbolic acid. Careful hygiene he considers to be of the first importance, and he endeavours to secure for his patients pure air and a warm liquid diet. So long as there is any catarrh he does not permit children to be taken out of doors, unless the weather is warm and pleasant.

Dolan still recommends as of much service in shortening the spasms and rendering them less frequent, bromide of potassium and belladonna, which, although he does not specifically say so, may with advantage be combined in one mixture.

Dr. Marfau very strongly urges the value of bromoform, and employs the following formula:

℞	Bromoform	gtt. xlviii	gt xlviii
	Ol. Amygdalæ Dulc	grm. 20.	ʒv.
	Pulv. Tragacanthæ	2.	ʒss.
	Pulv. Acaciæ	4.	ʒj.
	Aquæ ad	120.	ʒiv.

Mix first the bromoform and oil, and then add the other ingredients. A coffeespoonful contains two drops of bromoform. For children under five years of age he prescribes as a dose one drop for each year of age, which should be given three or four times a day. This dose may be gradually increased until it is doubled.

Tussol, a derivation of antipyrine, has been strongly recommended by Rothschild. (*Deut. Medwoch*, Nov., 1896.) He states that in patients who were treated with this only from the outset, the dura-

tion of the disease was notably shortened, and its whole course rendered milder.

Inhalations in many forms have been tried by various experimenters. Hirschfield and Monti were among the earliest to use carbolic acid in a 1 to 2 per cent. solution in the form of a finely divided spray over the mucous membrane of the throat ; both reported successful results.

Mohn, of Christiania, some years ago strongly recommended sulphur vapour inhalations as cutting short the disease in eight to fourteen days. His plan of treatment was to burn 25 grammes of sulphur (6 ounces) in the bedroom of the patient securing the presence at the same time of a certain amount of steam. The sulphur vapour was allowed to remain in the room five or six hours with doors and windows closed. Afterwards the doors were opened until the air within became respirable, when the child was brought back to the apartment and allowed to sleep in it over the night. Two or three repetitions of this treatment was said to cure the disease. Used with care we have thought that we have seen good results follow this procedure.

More recently Raubitschek has urged the therapeutical value of painting with a sublimate lotion (1 in 1,000) around the epiglottis, uvula, tonsils, and palate. In a recent epidemic at Naples, Prof. Fede employed this treatment, and recommends it strongly, saying that the pertussis disappears almost after the first application. Others unfortunately report that no appreciable benefit was derived from carefully made applications.

Of drugs for internal use, which may act antiseptically, unquestionably quinine takes the first place. It should be given in somewhat full doses, and best in the form of a dry powder, the taste of which may be modified either with chocolate or liquorice. Enquinine, a new substitute for quinine, has been used lately with distinct success. Speaking generally, we feel that in the way of arresting the growth and activity of any forms of bacteria in the human body, there is little to be hoped from the internal administration of germicidal drugs.

Richet's experiments on this subject are of much interest to the physician. He sought to determine the quantity of an antiseptic necessary to arrest the growth of bacteria in a litre of sea water containing 10 per cent. of urine and .1 per cent. of peptone. He found the amount of any antiseptic required was much greater than that which sufficed to kill fish. We must consider, therefore, that the therapeutic value of any antiseptic when given internally in this

affection, lies in its action on the stomach, relieving the catarrhal condition so frequently present in pertussis.

O'Donovan, Charles. "The Use of Manganese in the treatment of Dysmenorrhœa."—*The Medical News*, November 27th, 1897.

The writer states that since writing his first article (*Medical News*, April 6th, 1889) on the value of manganese in this complaint, he has had many additional proofs of its value. At that time the observation of Ringer and Murrell, of London, called attention to the benefit to be derived from the preparations of manganese in disorders of menstruation. Other clinicians at that time also testified in its favour, but after enjoying a certain vogue, it seems in the avalanche of new remedies which are constantly being exploited, to have been forgotten. Dr. O'Donovan writes that since that date he has continued to use it in cases which he considered suitable, and while it will not relieve all, in many it does act very favourably. The cases which appear in his opinion to receive most benefit from this drug, are unmarried women in whom there is a history of general malaise for some time before the flow begins, with pain which rapidly grows worse as the flow commences, and remains more or less severe during the first day. The question as to whether anæmia is present or not appears to have little bearing on the action of the drug. In several instances he says that he has found dysmenorrhœa of several years' standing to yield under this treatment; unfortunately in others the remedy was of little service, and he is unable to state why it should succeed so well in some and fail with others, but he is certain that a considerable number of cases may by its use be relieved to a degree that no other drug can approach. In his paper he gives detailed reports of several cases. He recommends its administration in pill form, beginning with one grain three times a day and gradually increasing the quantity till three grains three times daily are taken. The drug should be commenced about the middle of the inter-menstrual period and continued till after menstruation for that period had ceased. This treatment should be continued for three or four months at least before the judgment of failure is pronounced.

Therapeutic Items.

On the Value and Danger of Cantharides. Editorial in *Therapeutic Gazette*. May 15th, 1897.—The writer says of this drug that while possessing power for good, injurious effects may be produced by its injudicious employment. Personally he is convinced that the internal use of cantharides is resorted to too infrequently, since in quite a large number of cases he has seen beneficial results follow its employment in small

doses in chronic or even subacute parenchymatous nephritis. Quite recently Du Cazal in one of the French journals has strongly supported this use of cautharides, following the recommendations of Lancereaux. Saundby, on the other hand, states that some years ago he has tried cantharides systematically in cases of nephritis, and came to the conclusion that it exercised no specific effect in controlling the excretion of albumen. The danger of deleterious effects resulting from the employment of cantharides externally was illustrated by a case reported by Huchard, of Paris, in which a violent acute nephritis with anasarca, intense dyspnœa and convulsions were produced by the application of a small cantharidal plaster to the epigastrium. A physician should remember that blisters of size should not be employed in the presence of renal inflammation, and should in no event be allowed to remain in contact with the skin longer than is necessary.

On the Modern Neglect of Leeching in Practice, Sir Dyce Duckworth in *Liverpool Medico-Chirurgical Journal*, January, 1897.—The writer complains that medicine is now suffering from a neglect of bedside study for laboratory instruction. Few practitioners are now aware of the value of the practice of leeching, and pharmacists at the present hardly think it worth while to keep leeches on hand. The common view is that local blood-letting is generally unnecessary, and can be dispensed with in favour of some analgesic or antipyretic tabloid form of drug; furthermore, bleeding is regarded as a lowering and devitalizing process, which has little or no power in modifying inflammatory conditions as explained by the modern laboratory pathologist. Familiarity with local blood-letting enables the writer to say that for the sharp pain which ushers in acute pleurisy, pericarditis and peritonitis from any cause, there is no remedy so certain to afford prompt relief as local leeching. Opium may thus be withheld, and other symptoms allowed to declare themselves without the masking effects of this drug. In cases of cardiac dilatation in an advanced stage, with hepatic and general venous engorgement, inducing respiratory distress, the application of half a dozen leeches to the epigastrium is often of singular benefit, bringing prompt relief sooner than any other mode of treatment he is acquainted with.

On the Value of Antipyrin in Labour.—In an editorial in the *Therapeutic Gazette*, November, 1897, the writer states that although antipyrin can under no circumstances supplant the ordinary anæsthetics, and is a useless remedy in the pains of a perfectly normal labour, yet it may prove of much service in those cases where the pains are so excessive as to reflexly interfere with proper uterine contraction. It is also indicated in those cases where the liquor amnii has been discharged too early, and there is rigidy of the os. Antipyrin is useless in the second stage of labour, but appears to be of distinct value in the relief of troublesome after-pains. It is stated that antipyrin may also be used with some success in quieting a tendency to the development of pains before the full term has been reached.

The Internal Treatment of Renal Calculi, Mendelsohn in *Berliner Khuische Wochenschrift*, November 14th, 1897.—If one considers how insoluble uric acid is, how largely diluted by the fluids of the body any drug taken internally necessarily becomes, and what a small surface is presented by the calculus to the action of the solvent, medical treatment would appear to be unavailing except in so far as it is preventive. Purely dietetic treatment is insufficient. The alkaline treatment is of service in some cases but not in all, since the acidity of the urine is not always

increased, and there remains always the danger of rendering the urine alkaline, and thus precipitating the phosphates. Ebstein has shown that the basis of formation of renal calculi is an albumin-like substance upon which the salts are deposited. Moritz and the author have further shown that this substance is a component of normal urine, and only stagnation is necessary for the formation of calculi. Mendelsohn therefore recommends as the most rational treatment the use of alkalies in those cases where they are specially indicated, exercising due care as to the amount taken, together with the free drinking of liquids, thus inducing copious diuresis, and in this way flushing out the upper urinary passages and carrying off any minute calculi that might give rise to future trouble.

A. D. Blackader.

Reviews and Notices of Books.

"Osler, mit etwas Anders."

A Text-book of the Practice of Medicine. By J. M. Anders, M.D., Ph.D., Professor of Clinical Medicine, etc., in the Medico-Chirurgical College, Philadelphia. W. B. Saunders, 1897.

While perhaps under many conditions imitation is the sincerest flattery, it is doubtful that this adage will apply to those engaged in literary pursuits.

The plan of the work above mentioned is precisely that of Dr. Osler's classical text-book, and the manner in which the various subjects are dealt with bears such a striking similarity to it that we are readily convinced of the truth of Dr. Anders' statement in the preface, viz. : that he has "gleaned without stint from medical literature." The medical literature referred to, evidently concerns mainly the volume just mentioned, and very little attempt is made to conceal the wholesale "gleaning" of paragraph and sentence without really much alteration of style or wording.

For example, the following extract from the two works is a fair instance of our meaning :

Osler, Diphtheria, *p. 106*. Local complications, hæmorrhage from the nose or throat may occur in the severe ulcerative cases.

Skin rashes are not infrequent, particularly the diffuse erythema.

Occasionally there is urticaria, and in the severe cases purpura.

Anders. Diphtheria, *p. 186*. Local complications may be mentioned, as when we have hæmorrhage from the nose and throat in the more severe ulcerative cases.

Skin rashes are not unusual, especially the diffuse erythema.

Sometimes urticaria will be noticed, and in very severe cases purpura will mark the skin.

Dr. Osler's characteristically concise style is, however, in marked contrast to the other author's diffuseness.

Some minor differences between the classifications of the diseases are worthy of mention, such as the assignment of acute and subacute rheumatism to a place among the infectious diseases, while lobar pneumonia is removed from the chapter on diseases of the respiratory system and classed among the infectious diseases. This is, of course, largely a matter of taste, though to be consistent the author might be expected to place in the same category such affections as purulent pericarditis, abscess of the liver, etc. Doubtless it would have been better to leave the classification as in Osler.

Dr. Anders' work may be in many respects up to date so far as the information and classification are concerned, but the lack of originality cannot fail to draw down the rancour of those who regard intellectual honesty as of supreme moment in literature. C. F. M.

Spinal Caries (Spondylitis or Pott's Disease of the Spinal Column). By Noble Smith, F.R.C.S., Ed., L.R.C.P., Lond. Surgeon to the City Orthopædic Hospital; Surgeon to All Saints Children's Hospital; Orthopædic Surgeon to the British Home for Incurables. Second Edition. London: Smith, Elder & Co. 1897.

Any work drawing the attention of the profession to this important subject is worthy of attention, more especially when the earliest indication of the commencement of the disease is clearly pointed out and emphasized, and the differential diagnosis, carefully set forth, as it is in the work of Mr. Noble Smith. In the first four chapters the development of the deformity, and the symptoms and diagnosis from the other diseases of the spinal column which may simulate spinal caries, illustrated by clear plates and the report of cases, are carefully and fully described.

The remaining chapters, four in number, deal with the treatment of the disease and the complications that may arise.

Simple confinement to bed is regarded as very ineffectual. Every movement of the extremities is liable to cause some motion in the spine when the patient is strapped to the bed. When, in other words, the bed is made to act as a splint as well, the position is irksome and its use for any prolonged period well nigh impossible, especially among the poorer classes. Apparatus is recommended instead of confinement to bed, and the different forms of mechanical appliances suitable to the seat of the disease is described and illustrated.

Gentle extension of the spine is recommended to the extent that relieves pain and makes the patient more comfortable. Forced extension is not commended. Mr. Smith argues that his "adaptable metal splint" accomplishes this object much better than plaster of paris. With this "adaptable metal splint" applied, the patient should be kept in bed during the acute stage of the disease, and the prone position is strongly advised.

Operative treatment is discussed. Laminectomy is advised in suitable cases.

The treatment of abscess in different situations is dealt with in a moderately conservative manner. It is advised that post-pharyngeal abscesses be always opened behind the sterno-mastoid, with which advice all surgeons will agree.

The nursing, clothing and diet receive the full attention that they deserve. G. E. A.

Medical and Surgical Gynæcology. By W. A. Garrett, M.A., M.D., Professor of Obstetrics and Gynæcology at Queen's University, Kingston, Ont., and Gynæcologist to the Kingston General Hospital. Pp. 419. J. A. Carveth & Co., Toronto.

The author states in the preface that the book is specially intended as an aid to students, so that they will not require to take notes. As such, the book is undoubtedly of value, and that part of the introduction which

is devoted to the care of the girl who is approaching puberty deserves especial notice. The description of the development of the fœtus and ovum might be more fully entered into with advantage, and the rectum and perineum are not enumerated among the structures which support the uterus, but this is a question upon which, strange to say, authorities differ. Another omission is that of formalin in the description of the various antiseptics used for sterilizing the hands of the operator, etc., yet it is undoubtedly one of the most valuable antiseptic agents which we possess. The articles upon " examination in general," and plastic vaginal work are excellent, the latter being very clearly described and well illustrated with diagrams. As a rule the plates are well executed and correct, but there is one serious error, serious chiefly because the book is for students. Two plates are given to show the difference in the areas of dullness in ascites and ovarian cystic tumours. The plate with the dullness in the centre and to one side is marked " ascites," and that with a clear note around the umbilicus with dullness in the flanks is designated " ovarian tumour," which is exactly the opposite of what they should be. This mistake is probably a printer's error and will be corrected in the next edition, but one should be very careful about such things in publishing a book from which men will probably imbibe their first knowlege of a subject. F. L.

Transactions of the American Surgical Association. Volume the Fifteenth. Edited by DeForest Willard, A.M., M.D., Ph.D., Recorder of the Association. Philadelphia : Wm. J. Dornan. 1897.

This volume of Transactions contains the papers read before the Association at the meeting held May 4, 5, and 6, 1897. The papers and discussions of such a body of leading surgeons cannot fail to be of great interest, not only to surgeons, but to physicians and general practitioners. The present volume is handsomely gotten up and the illustrations are clear.

The report of the committee on necrology contains brief, but interesting, histories of the lives of Sir Thomas Spencer Wells, F.R.C.S., Sir John Eric Ericksen, Bart., F.R.S., LL.D., Sir George Murray Humphrey, M.D., Cantab., LL.D., Edin., Sc.D., F.R.C.S., Eng., F.R.S., Willard Hunt. M.D., William H. Pancoast, M.D., Perry H. Millard, M.D., and J. Edwin Michael, M.D.

The Gross Statue is very clearly shown, its history given, as well as the address on the unveiling of the statue by Dr. Mastin. The address on receiving the statue by Dr. Sternberg, and a most able and inspiring address by Dr. Keen, of Philadelphia are also recorded.

The history of the influence of anæsthesia on surgery is written by J. Collins Warren, M.D., LL.D.

All the succeeding papers are of great interest as representing the latest thought and work upon the subjects treated, and this interest is enhanced

by the views of the other members of the association which are reported in the discussions.

The Use of Roentgen Rays in Surgery in dealt with very fully by J. William White. He shows that skiagraphy has added to the definiteness and precision of our management of many forms of disease of the bones and joints, and it is rapidly coming to be of as great or even greater service to physicians.

Dr. McLane Tiffany writes the paper on the Technique of Intracranial Surgery, dealing fully with the questions of "preparation of the patient," "the best way of gaining access to the brain," "the arrest of hæmorrhage," "the anæsthetic to be used," "the removal of intracranial sutures," and "the closure of the wound and dressings."

Dr. Parkhill, of Denver, read a paper, the subject of which was A New Apparatus for the Fixation of Bones after Resection and in Fractures with a Tendency to Displacement, with report of cases. He illustrates his apparatus by clear cuts.

In a paper on Removal of Stone in the Bladder, Dr. Forbes, of Philadephia, makes very clear the advantage of litholopaxy over either suprapubic or lateral lithotomy. He quotes Surgeon P. J. Freyer, of the Bengal Army, India, who states that in the government hospitals of Punjab and Bombay alone, there were 7,694 litholopaxies performed on patients of all ages in four years (1891-94) with 255 deaths, or a mortality of 3.45 per cent.

A most exhaustive paper on the Surgical Treatment of Congenital Anorectal Imperfection is by Dr. Metas, of New Orleans.

Dr. Dudley P. Allen, contributes a paper on the Origin of Appendicitis, which is a description of the changes that, in many cases at least, precede a severe attack, emphasizing flexure of the appendix, stricture and thickening of the walls.

This is altogether a most interesting and instructive volume. G. E. A.

Ringworm and Alopecia Areata.—Their Pathology, Diagnosis and Treatment. By H. Aldersmith, M.B., Lond., F.R.C.S., Medical Officer, Christ's Hospital, London. Fourth edition, enlarged and rewritten, with new illustrations, pp. 327. London: H. K. Lewis, 136 Gower St., W. C., 1897.

The first chapter deals with the pathology of ringworm. The illustrations are good and the different varieties of this exceedingly troublesome disease are clearly pointed out, together with their relative frequency.

The manner of extracting and preparing the hair for diagnosis is very fully and plainly described.

The question as to the time when the disease may be certified as cured and the patient allowed to return to school is discussed, and the landmarks pointed out in a distinct and definite manner. This is a matter of very great importance. The disease occurs so often among children, it is so

contagious, and its presence so interferes with the education, that any light thrown on the question is of value. The author handles this question in a broad spirit and lays down definite rules that should be followed by all family physicians.

Unfortunately the treatment of this obstinate condition has not advanced as rapidly as the pathology. Of the many new remedies advanced during the past few years, none have come up to the expectations of therapeutists, and in the words of Crocker "the disease is yet the opprobrium of dermatologists." Nevertheless, the author lays down a thorough system for treating these cases which, if persevered in, will result in a cure, although not as rapidly as one might hope.

The chapter on alopecia areata reviews the discussion of late years as to the pathology, and the arguments in favour of the parasitic and neurotic origin are carefully compared. The treatment also is fully given.

Altogether the book is well up to date, is very readible, and can be very highly commended.

International Clinics. A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, &c., &c. Edited by JUDSON DALAND, M.D., Philadelphia; J. MITCHELL BRUCE, M.D., London; and DAVID W. FINLAY, M.D., Aberdeen. Volume III. Seventh series, 1897. Philadelphia: J. B. Lippincott Company. 1897.

This volume, in the main, is quite up to the high standard attained in the previous numbers. Among the thirty-seven clinical lectures contained, the following may be mentioned as specially worthy of note. A lecture by J. F. W. Ross, of Toronto, on the Surgical Treatment of Gall-Stones, and illustrated with five coloured plates, which greatly aid the reader in understanding the points brought out in the paper. Dr. Wm. H. Porter, of New York, reports the first case of Bilharzia Hæmatobia seen in America, the nature of the parasite having been recognised by Dr. Henry T. Brooks.

Other well written articles are: Practical points in the diagnosis of Inherited Syphilis in Infancy and Earliest Childhood, by Arthur E. Sansom, Congenital Defect of the Heart and other parts, by Francis Warner; and Bleeding in Pregnancy and Labour, by Freeland Barbour.

Text-Book of Diseases of Women. By CHARLES B. PENROSE, M. D., Ph. D. Pp. 529. Published by W. B. Saunders, of Philadelphia.

Professor Penrose has written this book not only for the use of students but also for the general practitioner, and has succeeded in producing a work which will be of service to both. It is clearly and well written, and is quite up to date. The illustrations also are very good. No mention is made of "deciduoma malignum," but no one will quarrel with the writer for the omission from a text-book of a disease about the existence

of which as a special form of sarcoma there is still so much doubt. Taking it altogether, the book can be recommended to those for whom it is intended. F. L.

Simon's Clinical Diagnosis, New (2nd) Edition, Revised and Enlarged. A Manual of Clinical Diagnosis by Microscopical and Chemical Methods. For Students, Hospital Physicians and Practitioners. By CHARLES E. SIMON, M. D., Late Assistant Resident Physician Johns Hopkins Hospital, Baltimore. In one very handsome octavo volume of 530 pages, with 135 engravings and 14 full-page colored plates. Cloth, $3.50.

Only a short time ago we reviewed in terms of high commendation the first edition of this very practical work. In the present edition the articles on the blood, saliva, feces, urine, and vaginal discharge have been to a great extent re-written. New methods of chemical examination have replaced older and more complicated ones, and throughout the text numerous additions have been made, increasing the size of the volume by about fifty pages. The author very truly says that no physician can make a scientific diagnosis, of diseases of stomach intestines, kidneys or liver, and treat them in a rational manner without some laboratory facilities. We know of no work in which the practical information required for such minute examination is given in such a clear and detailed manner. To our advanced students we cordially recommend the work, as one presenting modern laboratory methods not only with much thoroughness and exactness, but in a very interesting way, as far as possible pointing out the reasons which have led up to the conclusions reached. The work is unusually well illustrated.

Diseases of the Eye. By EDWARD NETTLESHIP, F. R. C. S., Ophthalmic Surgeon at St. Thomas' Hospital, London; Surgeon to the Royal London (Moorfields) Ophthalmic Hospital. Revised and edited by W. T. Holmes Spicer, M. A., M. B., F. R. C. S., Ophthalmic Surgeon to the Metropolitan Hospital and to the Victoria Hospital for Children. Fifth American from the sixth English edition. With a supplement on Colour Blindness by William Thomson, M. D., Emeritus Professor of Ophthalmology in the Jefferson Medical College of Philadelphia. Handsome 12mo. of 521 pages, with 2 colored plates and 161 engravings. Cloth, $2.25. Lea Brothers & Co., Publishers, Philadelphia and New York. 1897.

This new edition of a well-known text-book calls for few remarks from us. Its merits have been recognized both by students in ophthalmology, and by busy practitioners, who have found within its pages the needed information clearly and succinctly stated. We have much pleasure in stating that the present revision has been thorough. We regard it as one of the best of our smaller text-books on this very important subject.

A. D. B.

A Text-Book of Practical Therapeutics, with special reference to the Application of Remedial Measures to Disease, and their employment upon a Rational Basis. By HOBART A. HARE, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc., etc. Sixth Edition. Enlarged and thoroughly revised. Lea Brothers & Co., Philadelphia and New York. 1897.

We have much pleasure in calling attention to a new edition of this practical text-book on therapeutics. A very considerable portion of the present edition has been rewritten, in order to render all the statements in the text clear and concise, while embodying the latest views on this subject. Measures which after experience have not proved useful and reliable, have been excluded. The rapid exhaustion of the last edition is evidence of the high estimation in which this text-book is held.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXVII. FEBRUARY, 1898. No. 2.

THE BOARD OF HEALTH OF THE PROVINCE OF QUEBEC.

The publication of the third annual report of the Provincial Board of Health affords an opportunity to call attention to the excellent work that is now being done by Dr. E. P. Lachapelle and his small but energetic and able staff of workers. Few even in our own profession realize the amount of good work that is being done by them or the difficulties which they have successfully overcome. It is only, if we remember aright, four years ago since the President of the Board obtained authority to prepare tables of the vital statistics of the Province. For the collection of those vital statistics, the President undertook that for the first year there should be no expense to the Government beyond the few hundred dollars necessary to pay the statistician. There was no system of official registrars of the various parts of the province, and the President himself had to journey round to interest the Bishops of the various Sees in the work, and through them to obtain the gratuitous services of the parish priests throughout the province. Thanks to this episcopal aid, the statistics from all the wholly French portions, if somewhat slow in coming to hand, are nevertheless conscientiously prepared and are singularly accurate so far as regards the mere facts of birth, marriage and death, and to the parish priests, in their capacity of unpaid registrars, the fullest praise must be given, With reference to causes of death, the statistics are, as might be expected, in very scattered rural districts, far from perfect. Thus we notice in this last report that in one country district, the county of Charlevoix, of 406 deaths, 228 were from "unknown or unspecified" diseases!

When we come to the more Protestant portions and to regions where there is a mixed population, the statistics become imperfect. The parochial districts of the different sects do not correspond, hence it is difficult to be sure (more especially in the cases of the

Protestants in the larger towns), that births, marriages and deaths are fully registered. Indeed, in connection with the births in some of the sects, a further difficulty is involved, that it is not the births, but the baptisms that are registered, thus occasionally aged people newly baptised, are to be found among the newly born. Nevertheless, with great expenditure of disinterested labour, Dr. Lachapelle established the statistical department upon such good footing that the Government has been continually encouraged to aid forward the work. Add to this, that in the re-organisation of the board, Dr. Lachapelle has developed bacteriological and chemical departments, and herein has notably advanced the condition of affairs in the Province. It is no idle boast to say that during the last year the work of Dr. Wyatt Johnston upon dry blood-drop diagnosis of typhoid has brought the board of health of our province into the favourable notice of the whole civilised world. It is wonderful to think that all this good sound work upon demography and vital statistics, on prevention of disease, diagnosis of typhoid, diphtheria and tuberculosis for the whole province for the year '96-'97 has been accomplished for the remarkably small total of 10,500 dollars. It almost looks as though there was an inverse ratio between the stipends afforded to public servants and the value of the work done by them.

Dr. Elzéar Pelletier's report is full of interest. We would call attention to some few of the facts brought out in it and in the other articles scattered through the volume. The number (10,381) of cases of contagious diseases notified (smallpox, diphtheria, scarlet fever, typhoid fever and measles) is altogether in excess of what ought to be in this sparsley populated province. Of these cases 5,322 were from measles and 3,564 from diphtheria. With Dr. Pelletier, we would urge that there be a gratuitous supply of diphtheria antitoxin throughout the province. The ravages of measles with over 5,000 cases, as compared with only 736 due to scarlet fever, is very remarkable. It is evident that something must be done to bring this condition of affairs to an end; that municipal authorities and heads of families must not neglect to isolate and disinfect. Isolation will arrest the spread of measles, whatever be the popular disbelief in the efficacy of stamping out disease. With regard to disinfection, Dr. Pelletier points out that here there is frequent danger of disinfection being asked for too soon, and, as a result, the convalescing patient reinfects the dwelling. He gives a useful table of the periods during which the patients can communicate the various infections and of the periods of incubation, i. e., the time during which individuals who have come into contact with cases of infectious disease must be regarded as under suspicion. This table we would call to the notice of the

general practitioner, for the facts which it embodies are too little known and acted upon.

With reference to the gratuitous diagnostic service for typhoid fever, which this board was the first sanitary body to offer to the public, it is interesting to note that the total number of blood samples examined so far by Wyatt Johnston's method has been close upon 1,000. Positive results have been obtained in over 90 per cent. of all cases of typhoid. So far Johnston notes that he has not met with a clear and well marked reactions apart from typhoid fever. In about 0.5 to 1.0 per cent. of genuine typhoid cases the reaction is apparently absent, and in from 3 to 4 per cent. it is delayed, and only shows itself at the end of the first week, or disappears early in convalescence. The value of the dried-blood method is shown by the fact that some samples which gave satisfactory tests reached the laboratory from the north shore of the St. Lawrence in mid-winter, taking a week or more on the journey.

We would refer those interested in the subject to Dr. Johnston's record of his studies upon Formaldehyde as a disinfecting medium, and upon the testing of the relative value of methods of disinfection.

Dr. Ruttan (the Chemist to the Board) presents a valuable report embodying the weekly analysis of the Montreal water supply during 1895, 1896 and 1897.

Although appearances are against it, Montreal is to be congratulated upon the purity of its water supply, save for one short annual period.

The brown colour and the amount of sediment during the spring and summer indicate Ottawa water and peaty collecting grounds. In winter, the greater cold in the north largely arrests the flow of the Ottawa, and the supply, obtained close to the junction of the two rivers, is consequently from the St. Lawrence, and is colourless. Now, both Ottawa and St. Lawrence waters are singularly free from bacteria which give evidence of contamination by dejecta. There is, however, a period in April when apparently thaws and floods bring an abundance of surface water into the Ottawa, and the turbidity and carbonaceous organic matter (indicated by oxygen absorption), increase by leaps and bounds. At this period the water is certainly contaminated, and for three weeks or so in the spring it is assuredly wholly unfit for general distribution as a potable water.

We thus cordially re-echo the Chemist's recommendation that, at least at this season of the year, some suitable filtering apparatus be provided.

The broad facts brought out by M. Roy, in his report upon vital statistics, are not a little remarkable. No civilised nation can rival this province in high birth rate as compared with low death rate.

The birth rate for 1896 was as high as 38·57 per 1,000 inhabitants; the death rate, 20·05, or, leaving out still births, 18.58 per 1,000. In other words, the births practically more than double the deaths.

We extract the following from the report:

	Birth Rate.	Death Rate.	Surplus Births Over Deaths.
England and Wales	30·4	18·7	11·7
Scotland	30·4	19·7	10·7
Ireland	23·2	18·4	4·8
Italy	35·1	25·2	9·9
Austria	38·6	27·6	11·0
Hungary	41·5	29·6	11·9
German Empire	36·1	22·2	13·9
France	21·9	22·3	—0·4
Quebec Province, 1895	**39.3**	**20·4**	**18·9**
Quebec Province, 1896	**38·5**	**18·5**	**20.0**

Thus Austria and Hungary have higher birth rates, Ireland a lower death rate, but deducting the one from the other, Quebec is far ahead of any large territory in the civilized world.

The comparison has often been made between the birth rate and rate of increase of population in old France and the new. M. Roy still further emphasises the difference by compiling a table of the 35 counties in Quebec having an almost exclusively French population.

Population	658,756
Births (1896)	28,615
Deaths "	13,977
Birth-rate	**43.43**
Death-rate	**21.21**
Surplus of births over deaths per 1,000	**22.22**

In other words, the French of Quebec are increasing in numbers at the yearly rate of 22.2 per 1000; the French in France are dwindling at the rate of 0.4 per 1000. At this rate it is questionable whether Quebec will not have to return the compliment and prepare to re-populate l'ancienne France!

THE NINTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

The provisional programme of the Ninth International Congress of Hygiene and Demography has been issued. The meeting will be held in Madrid from the 10th to the 17th of April, 1898, and is under the patronage of His Majesty, King Alfonso XIII. and Her Majesty, the Queen Regent. Under the heading of "Hygiene" the following

different sections are announced: 1st, Microbiology in relation to hygiene; 2nd, Prophylaxis of transmissible diseases; 3rd, Medical climatology and topography; 4th, Urban hygiene; 5th, Hygiene of alimentation; 6th, Hygiene of infancy and of schools; 7th, Hygiene of exercise and labour; 8th, Military and naval hygiene; 9th, Veterinary hygiene—civil and military; 10th, Sanitary architecture and engineering.

Under the heading of "Demography": 1st, Technique of demographic statistics; 2nd, Statistical results in relation to demography; 3rd, Dynamical demography.

The organizing committee explain that delay in issuing the programme has been caused by the Government being fully occupied with the two colonial wars with which Spain is at present engaged. This is the first time that an assembly of such importance is to be held in Spain, and the organizing committee have secured the hearty co-operation of the Madrid authorities in the entertainment of their guests, to whom they hope to demonstrate, that in the care of public health they are in every way abreast of the age.

THE PHILADELPHIA MEDICAL JOURNAL.

We have received several numbers of the new weekly medical journal published in Philadelphia, under the editorial management of Dr. George M. Gould. Dr. Gould is universally known as an able and conscientious writer on all matters pertaining to our profession. He has had previous experience of editing a weekly journal, and will, we have no doubt, soon place the *Philadelphia Medical Journal* in the front rank of American medical weeklies. The new journal presents several new and important features. It is to be conducted solely in the interests of the profession, and as proof that this is no empty boast, we have only to mention that the price is only $3.00 yearly, a very low figure for a weekly of forty-four pages. We are also promised a journal which will not advertise preparations of a secret nature. We hope that the editor will go a step further and refrain from publishing advertisements laudatory of preparations whose value is not only not proven, but cannot hope to be proven. A very useful feature is a brief synopsis of the leading articles of American English and Continental journals. In this way the busy practitioner can, at a glance, see what is being done elsewhere that is of importance to him, and if within access of a good medical library, he will be able to save much outlay in medical journals.

We wish the new enterprise the success its worthy and independent stand so justly merits.

AN ADDRESS BY DR. DR. HERTER.

We have much pleasure in announcing that Dr. Herter, of New York, will deliver an address in the large hall of the Faculty of Medicine, McGill University, under the auspices of the Montreal Medico-Chirurgical Society, on the evening of March 4th. He has chosen for his subject "Uræmic Intoxication," with special reference to its pathology and treatment. Dr. Herter has given much study to the subject, and we feel confident that his address will prove very interesting. The profession generally are invited.

Obituary

ERNEST HART.

With Ernest Hart there has passed away one of the most uncommon characters in our profession during this century, a strong man whose influence has been felt throughout the whole English-speaking world. I say this advisedly. It was not merely our profession that felt his influence, but the general public, and that not merely in the old country, but in the British colonies and the United States. To the public, it is true, his name may not have been known—indeed, as has recently been pointed out—only a single New York daily paper troubled to give any notice concerning him when the news of his death was cabled to this side. But he it was who made the *British Medical Journal* an influence in moulding public opinion and directing legislation, and making it his duty to call attention more especially to matters of public health, and to direct aright the opinions of the profession and so of the populace, his opinions upon these matters were echoed everywhere. Through his exertions it was that the *British Medical Journal*, from being inconsiderable and unauthoritative, became the most widely read and most important organ of any profession throughout the civilized world. How he achieved this it was my good fortune to learn during the last summer from his own lips. It seems a simple means, but only a man of persuasive influence could have brought it around. Briefly, when any matter of professional or public interest came to the fore he obtained the expression of the recognized leading authority in that subject in an unsigned leading article. I should exceed my privileges were I to recount the names given to me by Mr. Hart—name after name of men of European reputation in their several departments who thus formed the subsidiary staff of the *Journal*, men who were glad to sink their personalities while enforcing their views. What other medical editor has ever collected around him such a staff as that he named to me. To these with a happy instinct he added the coming men among the younger workers.

With this power of gaining the aid of the strongest men and best writers he combined a remarkable business capacity. Only a man endowed with such could have directed the *Journal*. Herein, it is true, lay his weakness as well as his strength. The ideal always

before members of our profession is medicine for medicine's sake, apart from business advantage. We find it hard to appreciate anyone of our number in whom keen business instincts show themselves prominently. Had Ernest Hart been an ideal medical man he never could have brought his *Journal* to its present powerful position. Because he was not such there was always, it must be confessed, an undercurrent of doubt, not to say fear, about him and his methods—a feeling that the man who was the mouthpiece of our profession did not in himself truly represent our body—and this in some few passed to hostility. Characteristically he knew himself, and went his way despite the feeling. A strong man, he was prepared to make, and made enemies, but that same active business capacity rendered him absolutely essential not only to the *Journal*, but to the leaders of the profession in England, whenever any project bearing upon the interests of the profession had to be brought to a successful head. When we call to mind the many reforms he either initiated or was the means of accomplishing, it is a small matter and trivial, if, also, he ventured to have a pecuniary interest in sundry reforms, which, to be gained, necessitated the establishment of commercial undertakings—supply of pure milk, coffee taverns, pure aërated waters, and so on.

In my old university for long years one of the familiar figures was a snuffy oriental scholar, a Polish Jew, if I remember aright, with more than one sneeze in his name, stumpy and as broad as he was long, whose portentous paunch could be seen day after day on the road to or from the University Library, followed immediately by an armful of books on the one side, a faded gingham on the other. He was learned in the Torah and all the colossal casuistic literature of his religion: no one in England more learned; hence scholars came from all sides to consult him. Add to this that his piety was profound and notorious; he kept scrupulously all the fasts and all the feasts, and on the Sabbath would not so much as trim his lamp—and his lamp was always smoking,—but must call in some next-door Gentile to perform the office. So great was his known piety that the other oriental scholars of the university, simple, good men, were affected by it, albeit they were Gentiles. This I know, that when it was reported that being aggrieved he had cast his eye upon sundry of them, uttering appropriate Talmudic exorcisms, they were distinctly most uneasy, and, true it is, that one after another they sickened and died. Parenthetically it may be mentioned that he, also, died about the same time. I remember the brightest and best of these orientalists, himself a chronic invalid, destined to pass away a few months later, referring to the episode after the Talmudist's death, and expressing, half in jest, his

belief that now, assuredly, the exorcism must have worked off. "Yet," said he, "while —— —— might in his learning and piety exorcise us so that we sank and died, it is good to think that he could do no more; for in the Talmud it is stated that, whoever he be, he who has done good work in this life, has increased knowledge and benefited his kind, will be received into heaven, because heaven cannot afford to lose such an one."

Few, in our time, have accomplished so much as did Ernest Hart for his kind—for the ordinary every-day people throughout Great Britain. As a writer in the *British Medical Journal* remarks: "Mr. Hart brought his keen interest to bear on the glaring evils of the time, and by a persistent attack on one blot after another he let light into many of the dark corners of our social life. He had the not too common gift of seizing the most favorable opportunity for securing attention to glaring evils, and he had the tact and courage to persevere until the reforms he had in view were attained."

So long ago as 1856, when still a medical student, he, with Timothy Holmes, started a successful agitation to improve the position of junior naval surgeons. His first great work, begun in 1865, was on behalf of the sick poor in the London workhouses, just as one of his last was to expose the miserable condition of many provincial workhouse infirmaries. He it was who led the crusade which in two years caused the establishment by the Government of state hospitals and asylums for the sick pauper. He accomplished a much needed reform in the abolition of the barrack schools for pauper children. The commission which he and his paper appointed led to an exposure of the hideous evils of baby farming, and to the passage in 1872 of an act for the Protection of Infant Life. The influence of milk in spreading zymotic disease and the distribution of pure milk, water-borne disease and the best forms of filters, smoke abatement, vaccination, practical means of aiding temperance and the development of the coffee tavern system—these are but some of the movements in the development of which he was the means of accomplishing more than any of his contemporaries. Of a truth he did good work. Of slight build, active and nervous, he was all energy despite the diabetes, which for fifteen years had relentlessly undermined his constitution. It was a touching sight last summer, when already he was the prey of diabetic gangrene, to see him, the invalid, at his lovely country cottage outside London, full of his projects, actively pushing forward half-a-dozen good and useful movements, with a keenness and an enthusiasm which shamed us who were in good health; yet with an interest in everything connected with medicine and art and life in general, over and

above his own pet schemes. We in Canada have especial cause to hold him in esteem for to his visit and his efforts we owe the establishment here of branches of the British Medical Association and owe therefore the signally successful gathering of last summer. He was one who loved his fellowmen and worked for them, and now this earth is poorer for his death—and heaven the richer.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Transactions of the American Ophthalmological Society. 33rd Annual Meeting. Published by the Society, Hartford, 1897.

Elements of Latin for Students of Medicine and Pharmacy. By Geo. B. Crothers, A. M., M. D., and Hiram H. Rice, A. M.; F. A. Davis Company, Philadelphia, New York, and Chicago.

Outlines of Rural Hygiene. By Harvey B. Bashore, M.D. F. A. Davis Company, Philadelphia, New York, and Chicago.

Surgical Diagnosis and Treatment. By J. W. Macdonald, M.D. W. B. Saunders, Philadelphia, 1898.

"Antivene" in the Treatment of Leprosy. By Isadore Dyer, Ph. B., M.D. Reprint from the New Orleans Medical and Surgical Journal.

Third Annual Report of the Board of Managers of Craig Colony to the State Board of Charities. 1898.

A Clinical Study of Widal's Serum Diagnosis of Typhoid Fever. By J. H. Musser, M.D., and J. H. Swan, M.D. Reprint from the Journal of the American Medical Association. 1897.

On the Disappearance of Endocardial Murmurs of Organic Origin. By J. H. Musser, M.D. Reprinted from the British Medical Journal, 1897.

Angina Pectoris; its Relation to Dilatation of the Heart. By J. H. Musser, M.D. Reprinted from the American Journal of the Medical Sciences. 1897.

Case of Carcinoma of the Descending Colon, Excision and Anastomosis Recovery. By J. H. Musser, M.D., and Thomas S. K. Morton, M.D. Reprinted from the University Medical Magazine. 1896.

A Case of Leucæmia. By J. H. Musser, M.D., and Joseph Sailer, M.D. Reprinted from the Transactions of the Association of American Physicians. 1896.

Deficient Excretion from Kidneys not Organically Diseased, and Some of the Diseases Peculiar to Women, and Diseases of the Skin. By L. D. Bulkley, M.D. Reprinted from the Journal of the American Medical Association. 1898.

The Cure of Vesico-Vaginal Fistula by the Free Dissection of the Bladder from its Vaginal Attachments and Closure with the Buried Continuous Tendon Suture. By H. O. Marcy, A.M., M.D., L.L.D. Reprinted from the Journal of the American Medical Association. 1897.

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXVII. MARCH, 1898. No. 3.

Original Communications.

A CASE OF CEREBRO-SPINAL MENINGITIS ASSOCIATED WITH THE MENINGOCOCCUS OF WEICHSELBAUM.

BY

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AND

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It is just a quarter of a century ago since the late Dr. Palmer Howard published the first record of observations on Cerebro-Spinal Fever in Montreal. This was in 1873, and during that period a small epidemic occurred, the cases breaking out in various parts of the city, as well as in the outlying districts. The published observations, however, are purely of a clinical character, and only one autopsy is recorded, that by Drs. Roddick and John Bell, in which it is noted that pus existed at the base of the brain and along the spinal cord. The majority of cases recorded at that time had affected boys from eight to ten years of age, some of the cases recovering, though, in the majority, a fatal issue supervened.

It is interesting to observe at this time, a time when bacteriology as a science had scarcely been created, the insistance which Dr. Howard laid upon the specific poison which he asserted must be associated with the malady. The early appearance of the purpuric condition, the general course of the disease, and its tendency to assume an epidemic character, all strongly favored the view that the disease was of a zymotic nature.

Since that time a few sporadic cases have been recorded, the observations for the most part being again of a purely clinical nature. Dr. Osler, in 1882, records in the Canada Medical and Surgical Journal,

the first satisfactory pathological examination of any case in this city and since then a few isolated cases have been observed by Dr. Wyatt Johnston, though in none of these whatsoever was there any bacteriological examination made, other than to exclude the presence of tubercle bacilli.

The opportunity having been afforded us in the past few weeks of observing a similar case and obtaining satisfactory bacteriological examination, we take this occasion to bring it to the notice of the society, this being, to the best of our knowledge, the first instance in Canada where the meningococcus of Weichselbaum has been demonstrated at autopsy to be associated with cerebro-spinal fever, and the first time that acute purulent pericarditis has been noted as a complication.

The *history* of the case is of no little interest and affords a fairly typical example of the character of this rather uncommon disease. A young Canadian female aged 21 had been spending a few weeks in Boston immediately prior to her illness, her domicile being in a healthy and good locality. Quite a few cases, however, of cerebro-spinal fever have been observed in that city during the past few years, though the epidemic, it would appear, is now gradually dying out. During her visit to Boston, the weather had been very good, and she felt in excellent spirits. On the 28th of January, she returned to Montreal, arriving in the evening, seemingly in perfect health. Early the next morning she complained of chilly sensations, though to the touch her skin was hot and dry. Very shortly afterwards vomiting supervened and continued at intervals until the afternoon. Evidently the disease had a very acute onset, for when Dr. James Bell, in answer to a summons, saw her at half-past one in the afternoon, the facies seemed indicative of collapse, the face being drawn, thin and pale: she was now suffering from severe headache mainly occipital and in the nape of the neck. On examination, the temperature was 102°, the pulse small and rapid, but there was otherwise no evidence of disease except some tenderness over the lower portion of the abdomen. Upon the next day her condition was worse, the headache was very severe and she repeatedly cried out "Oh my head," referring the pain mainly to the region of the vertex and the occiput. There was, however, no more vomiting, and the abdomen was less tender, but the temperature remained over 100°. There was no improvement evident during the next 24 hours, and the patient showed distinct signs of delirium. Petechiæ were now noticed for the first time upon the abdomen, and there was general hyperæsthesia. When addressed she merely complained of the intense headache. On the same evening the patient was admitted to the Royal Victoria Hospital. While being dressed for

removal the rigidity of the neck was quite manifest, as also photophobia. All night long after admission the rigidity was most marked, and by the early morning the patient had become delirious. She assumed the dorsal position with her legs slightly flexed upon the abdomen. The pupils were equal and somewhat dilated, the tongue was dry and cracked, the temperature was 104.5°, the pulse 110, and the respirations 26. On this, the fourth day of the disease, the petechiæ upon the trunk were more marked, and new ones had appeared upon the arms. There was also a transient erythema upon the chest and for the first time herpes developed below the left labial angle; and what was of still greater interest, upon the left side of the nose and cheek. The rigidity of the body seemed to be more general, and the nurse in charge noticed from time to time clonic spasms in the upper extremities. By the afternoon delirium gave place to coma. It should be here mentioned that the diagnosis of epidemic cerebro-spinal meningitis having been made, the patient had been carefully isolated as a precautionary measure. In addition to the above symptoms, there was now noted increasing rapidity of the respirations, general hypertonus of the muscles, flexion of the arms at the elbows, and extension of the lower extremities, but there was no paralysis anywhere. Strabismus was not evident. The thoracic organs showed no special evidence of disease, and the abdomen was normal to palpation. The urine was turbid, contained a heavy sediment of urates, was acid in reaction, and had a specific gravity of 1023; there was a large amount of albumin as also numerous granular casts of large size. On the following day the temperature was still higher, 106.6°, and the coma became deeper. The pulse now for the first time, became distinctly irregular, but otherwise no special change could be observed. The usual colour changes in the petechiæ were manifest and no new ones had appeared. Examination of the blood on this, the fifth day of the disease, by Dr. Robins, the Resident Physician, showed the red cells to number 5,130,000, white cells 22,000, and the hæmoglobin 75 per cent. Cultures from the blood of the finger, which had been taken the day before on agar, serum and broth, all remained sterile. On the following day, in the afternoon, the patient died, progressive asthenia being the only noteworthy change. Lumbar puncture was made the same afternoon, but the cultures resulting were contaminated, and gave no evidence of the meningococcus.

The treatment adopted was of necessity purely symptomatic and supporting, in this way differing to some extent from that adopted by the late Palmer Howard, who recommended bromides, and iodides with digitalis, and considered strychnine as contraindicated.

Autopsy.—The autopsy was performed six hours after death with

the assistance of Dr. A. G. Nicholls, and the condition found was briefly as follows:

The body was poorly nourished, with rigidity marked in the jaw and lower extremities: the back was moderately livid. There were petechiæ upon the abdomen and arms, and a few likewise on the back: these varied in color according to their age, presenting all gradations from dark red to pale brown. Herpes was present upon the lower lip and left side of the nose. Both wrists were œdematous and slightly swollen, but the other joints appeared normal.

Head.—The calvarium was moderately thick with deep arterial grooves, the dura markedly congested, and the longitudinal sinus contained pale mixed clot and some dark fluid blood. The inner surface of the dura was reddened, but the dura itself showed no special thickening, nor was it adherent to the underlying pia-arachnoid. On exposing the arachnoid but very slight œdema was present, while a small quantity of greenish-yellow gelatinous lymph was seen in the subarachnoid space. This exudate was situated mainly on the convexity, along both sides of the longitudinal sinus and following the lines of the larger vessels. Over the temporal areas there was comparatively little, and nowhere was there any pus between the dura and the arachnoid. At the base of the brain there was likewise a moderate amount of pus, more especially behind the optic chiasm and the medulla, likewise between the cerebellum and the brain, and to a less extent in the central groove between the two hemispheres. The pia itself was distinctly adherent, quite œdematous and thickened. In the Sylvian fissures no evidence of tuberculosis or other abnormality could be ascertained. Upon opening the brain itself the lateral ventricles were found of normal size, and in the right were a few flakes of lymph, as also a few drops of fluid pus. The ependyma was slightly granular. The third and fourth ventricles were free from exudate. The white matter of the brain contained numerous punctiform extravasations of blood, and the gray matter was likewise congested, though to a less extent; the cerebellum was soft and friable, while the basal ganglia were congested and showed likewise minute hæmorrhages. The lateral sinuses contained dark fluid blood. The bones at the base of the skull showed nowhere any signs of disease.

Spinal Cord.—On removal of the brain a moderate amount of seropurulent matter escaped from the vertebral canal. The cord itself was removed from behind, and after separation of the laminæ the dura was seen to be tensely expanded in various parts of its course irregularly. The vessels about it were congested. On slitting up the dura

the posterior surface of the pia-arachnoid was seen to contain numerous patches of lymph in the sub-arachnoid space; these existed as either fusiform collections of pus or were spread out in broad plaques over the posterior surface of the cord. There was distinct œdema of the pia, and in places it was markedly thickened. On section at various levels of the cord marked congestion was the main feature presented, but there seemed to be no evidences of punctate hæmorrhages.

With reference to the organs in general, the main conditions present were *acute purulent pericarditis*, œdema and partial collapse of the lungs, with acute bronchitis; obsolescent apical tuberculosis with left adhesive pleurisy, acute parenchymatous nephritis and catarrhal enteritis. The spleen was of normal size, and there was no further evidence in general of a septicæmia.

Bacteriological Examination.—Fresh coverslips, taken directly from the purulent exudate from the cerebral and spinal meninges, showed it to consist mainly of pus cells, fibrin, granular and colloid-looking masses. Some of the cells were of enormous size, three to four times that of an ordinary pus cell, containing large nuclei; some appeared to be vacuolated, and in a large number there were cell inclusions. Other cells, again, seemed much more ill defined, and their nuclei were irregular and fragmented. The leucocytes present were for the most part of the polynuclear variety. Specimens were stained by various methods, some with Löffler's blue, others with fuchsin, saffranin, and also by Gram's method. With Löffler's blue one saw semmel-shaped diplococci, resembling very much the gonococcus, except that the size varied very much and that they tended, further, frequently to form tetrads. The staining, too, was extremely irregular, some, and particularly the larger ones, taking up an almost black color, while others adjacent to them might be scarcely stained at all. While many of these were found within the cells, a very large number were constantly found free, our experience in this respect being quite at variance with that of Weichselbaum, Councilman and others; with this exception, however, the coverslip preparations corresponded in all respects to the descriptions given by these authors. On staining by Gram's method, the bacteria became decolorized.

Coverslips from the pericardial exudate showed likewise a pure culture of the same micro-organism, while others made from the larger bronchial tubes showed similar cocci mixed with numerous other forms. In the largest bronchi there were chiefly lanceolate diplococci and the meningococcus above described. Coverslips were likewise made from the spleen and liver pulp, from the heart blood and the bile, but in none of these instances did we obtain any bacteria.

On the following morning Dr. Adami removed some of the nasal

secretions and demonstrated the presence of the micro-organism in stained coverglass preparations.

Cultures were made from the various tissues and organs of the body on different media, the most abundant growths being obtained on glycerinated agar. On this medium the *exudate* from the meninges gave an abundant growth after thirty hours, appearing at first as pearly gray dots, spreading out in plaques over the surface of the tube and gradually assuming a more grayish, opaque appearance. On staining with the various reagents above mentioned, the results were identical, and no definite chain formations were seen on this medium. On being transferred from the agar to broth, the growth was again abundant, appearing mainly in the sediment, the supernatant fluid remaining fairly clear. The diplococci were here for the most part large and arranged distinctly in chains, containing from four to eight cocci in each. Some of the chains, however, were made up of very much smaller organisms, resembling the ordinary pyogenic streptococci; that they were, however, of the same nature as the other diplococci was proven by their negative reaction to Gram's method. Cultures on glycerinated agar and broth from the *pericardial exudate* gave likewise pure cultures of the meningococcus. From the *heart blood*, the *liver*, the *spleen* and the *bile*, cultures taken on various media remained sterile. From the *lung* a mixed culture of staphylococci and lanceolate diplococci was obtained. While most observers have found agar the most suitable culture medium, it may be stated that the Boston bacteriologists have met with best results in employing blood serum; the differences are in all probability associated with the chemical reactions of the media. *Inoculations* of a three-days-old broth culture subcutaneously into a guinea-pig proved innocuous, as did also the intravenous injection into a rabbit of a 24-hour-old broth culture. It has been shown repeatedly that the life of these bacteria is extremely short, and transfers every second or fourth day are necessary to keep the germs alive. Hence a three days' growth might readily prove harmless to a guinea-pig, though the fact that recent growths were innocuous when introduced into the circulation is of no little interest.

Sections were made of the various organs and tissues of the body; those from the brain and meninges, including the exudate, showed mainly great dilatation of the blood vessels, with recent punctiform hæmorrhages and large collections of polynuclear leucocytes, with extreme fragmentation of the nuclei. Extensive areas of necrosis were likewise manifest in the nerve tissue. The micro-organisms were by no means easy to detect, the specimens stained with saffranin giving the best results. In the spinal cord the same condition was evident,

but the more minute changes in the cellular elements are still under investigation. Sections from the other organs showed no features of special interest in connection with the case.

The presence of a pericardial exudate containing the meningococcus is quite evidently of extreme rarity, and the entire absence of fibrin on the serous coats is remarkable in view of the amount of pus present.

It will be seen, then, from the foregoing that the case recorded was quite evidently of the nature of an epidemic cerebro-spinal meningitis, while the organism associated with the lesions is undoubtedly the meningococcus described by Weichselbaum in 1886, and much more fully within the last twelve months by Dr. W. T. Councilman, of Boston. As is already well known, it has been generally accepted until quite recently that this malady is due to the diplococcus lanceolatus, while the organism described by Weichselbaum has been practically disregarded.

Observations made, however, since 1895, more especially by Jæger, of Stuttgart, and Councilman, Mallory, and Wright, of Boston, rendered it undoubted that in the epidemic form of this disease, not the pneumococcus, but the meningococcus of Weichselbaum is the chief etiological factor. The above-mentioned Boston pathologists had occasion to examine thirty-five cases post mortem, and the meningococcus was found in all but three cases. Certainly no such complete series of observations of any epidemic has hitherto been made commensurate with these, and the uniformity of their results in examining so extensive a material, places the nature of the disease beyond any doubt. It is true that in a number of cases the pneumococcus has been frequently found in pure culture, but so far as we are aware, it has never been demonstrated with a satisfactory uniformity. Flexner and Barker, of Baltimore, have recently published a most interesting and valuable article giving a detailed account of the conditions under which an epidemic of cerebro-spinal meningitis had occurred in a small mining town of Maryland. Sixty-eight patients were observed but unfortunately it was possible to obtain autopsies in only two instances. The pathological lesions in these cases are most minutely described, and the bacteriological examinations would seem to indicate that the pneumococcus was the chief organism present. Smears made from the exudate on the meninges showed a lance-shaped diplococcus which stained by Gram's method, but the cultures and inoculation test did not afford very satisfactory results. The authors, however, are of the opinion that the pneumococcus was undoubtedly present, although the trying circumstances under which the investigations were made rendered it impossible to obtain eminently satisfactory results.

A DISCUSSION ON THE DIETETIC TREATMENT OF DIABETES.

BY

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When not many months ago your distinguised President paid me the compliment of inviting me to open a discussion in this Section, I fully appreciated the brilliant opportunity afforded me; and I can only express my regret that in this year of festivities, amid the bustle of many engagements, I have not been able to do for you all I wish, and you deserve. I should not have accepted this position but for the consideration that we who were intending to cross the Atlantic to represent British medicine upon your shores were after all but a small band, and that each was bound to do his best for the honour of England, if not for the edification of Canada. At the same time it gives me great pleasure to address you upon a subject in which I take great interest; and, although assured beforehand of your courteous reception of any views I may express, I venture to hope that they may find some echo among you, and that they will travel back to Europe with the authority of your approval.

When the diagnosis of diabetes mellitus has been established, sometimes when only the presence of sugar in the urine has been detected, it is the very general practice to place the patient upon a so-called "diabetic diet." That is to say, he is furnished with a list of permitted and forbidden articles of food and drink arranged upon the principle that all carbohydrates are injurious, and he is told that he must keep to this diet until the sugar has disappeared from his urine. The extent to which this regimen is followed depends upon the authority of the doctor and the docility of the patient, but any relaxation is regarded as a departure from the right rule. It may be conceded to the exigencies of the patient, but is never offered as part of a rational scheme of dietetics. I believe this to be a perfectly fair statement of the general practice in Europe, and I suppose in America as well, in spite of the fact that not a few protests against it have been made by those who have a right to be heard on this question.

Diabetes mellitus is nothing more than the name given to a clinical group characterised by the presence of persistent glycosuria. The causes of this glycosuria and the proper classification of the compon-

ents of this group are still much debated. Meanwhile, the various doctrines in dispute should not be allowed to influence our views upon treatment, and certainly have no claim to the predominance which they have so often successfully asserted.

In health the urine contains no sugar, or only a minute trace, so that all carbohydrates ingested are in some way converted or destroyed, provided their quantity is not excessive—that is to say, this capacity for utilising carbohydrate food is not unlimited, and is subject to variations in different individuals and in the same person at different times. A dose of grape sugar, varying from 150 to 200 grammes, is invariably followed by transient glycosuria, and we are familiar with the occasional occurrence of the same phenomenon in healthy persons after some error of diet, such as taking too much sweet champagne. Such cases are on the borderland of diabetes, and von Noorden has suggested that persons who become easily glycosuric from slightly exceeding their usual allowance of carbohydrate food are liable to become diabetic. This is a point upon which further evidence is required, but it is impossible to deny their close relation to those milder cases of diabetes which yield readily to a moderate reduction of carbohydrate food.

But carbohydrate food is not the only source of sugar. In severe diabetes, glycosuria continues, although much reduced in amount, when the patient is placed on a flesh diet, and this is explained by the discovery that a carbohydrate molecule is formed in the process of converting albumen into urea in the proportion of 45 parts per cent. This fact, duly appreciated, must convince everyone of the futility of persisting in withholding carbohydrates in the hope of removing the glycosuria; or at least it cuts away the physiological ground for this practice, and compels us to look for its justification, if it can be justified, in clinical experience. This is the point at which I wish to arrive. If it is conceded that the disputed data of physiologists do not afford a sound basis for our treatment of diabetes, but that we must look to clinical results before we say that a means is good or bad, then the old routine method is doomed.

Instead of ordering a stereotyped diet in every case, we shall try experimentally in each individual how much carbohydrate, or rather what combination of proteid, fat, and carbohydrate gives the best result. This is the method which I wish to advocate here to-day, and perhaps you will allow me to say that the views I now entertain have been adopted solely upon the basis of clinical experience. The first definite step towards the acquisition of clinical experience in the dietetic treatment of diabetes was made by Rollo when he put his

patients on flesh diet, and it is an experiment worth repeating by everyone who wishes to study the subject. If anyone will try it, and then watch the effect of the cautious addition of carbohydrates, he will notice not only that the patient is very much happier, but that he gains weight, proving thereby that physiological equilibrium, even in a diabetic, may be restored by carbohydrates. At the present day no one attempts to keep people on Rollo's diet, but if they were consistent they should do so. The present orthodox diet is to a great extent a pretence. Potatoes, which contain 15 per cent. of starch, and milk with its 3 per cent. of lactose, are forbidden; while gluten bread and all the fancy articles from the diabetic food shops, many of which contain from 25 to 40 per cent. of starch are allowed without stint. There is no attempt at dosage; forbidden articles are absolutely excluded, but no limit is placed on the quantity of those permitted. It is not at all uncommon to find a patient stripped of all carbohydrate food except brown bread or toast, a concession to the exigencies of the situation, but this is taken at discretion. What is the good of measuring the excretion of sugar to the decimal part of a grain, when no account is taken of that which goes to form this sugar? If it is worth while to weigh the patient, to measure his urine, and to estimate his sugar, it is quite as important to weigh his food.

My method, after all, does not involve a great sacrifice of time on the part of the doctor; in fact, all the most important observations can be made, and a register kept, by the patient himself; the only thing he cannot do is the analysis of the urine. I recommend that the patient should once weekly get weighed, and collect and measure with approximate accuracy the whole of his urine for twenty-four hours; a specimen of the urine should be sent to the doctor, who should determine the total amount of sugar in grains or grammes. Of these observations, the body weight is the most important, for if, after allowing for fluctuations of 3 or 4 lbs., it continues on the whole to be stationary or tending upwards, we have the best proof that the diet is properly regulated, even though the sugar shows a moderate increase.

In order to determine the diet most suitable to each patient we must proceed experimentally, and although this may be done either by gradually reducing or gradually increasing the amounts of saccharine and starchy food, the latter is the more convenient plan. It is easier for the doctor to make concessions than to insist upon further restrictions, and patients are contented to put up for a short time with considerable deprivations when they are told that relaxations will be made as they are found to be safely permissible. In addition, many

patients are suffering from polyuria with frequent micturition and great thirst, and these symptoms can best be checked by strict diet for a limited time, combined, if necessary, with the administration of a grain or two of extract of opium every night. Further, the result of strict diet affords valuable information for prognosis, as it is only in the milder cases that the sugar disappears under its influence.

By strict diet I mean that from which sugar and starch are excluded as far as possible. I do not allow gluten bread, but employ as a substitute for ordinary bread the "brown loaf" or starchless biscuits made by Mr. Callard, of London. If these were not procurable I should use cakes made of almond or gluten flour fermented to destroy any sugar that might be present. Callard's brown loaf contains only 6 per cent. of starch, and is quite as palatable as gluten bread; the biscuits are free from starch.

The patient should, if possible, make one meal, for example, breakfast of fat bacon or eggs and bacon, with which he may eat cabbage and the above described bread or biscuits. He is, of course, allowed other green vegetables, any animal food, tea or coffee, with cream, and, if he desires it, 2 to 3 ozs. of sugar-free alcohol, with mineral water.

When the effect of a week of this diet upon the glycosuria has been determined, I proceed according to the result. Should the sugar have disappeared entirely, or almost entirely, I add 6 ozs. of baked potatoes and 1½ pint of milk, containing between them the equivalent of about 1,100 grains of sugar. If this causes no glycosuria I order 4½ ozs. of dry toast, of which about 800 grains are starch. I also allow a bottle of light wine containing very little sugar, such as ordinary Bourdeaux or Moselle, or in some cases a pint of bitter Burton ale. If such a diet causes no return of symptons, the doctor may be satisfied and the patient is generally contented, and if sugar continues to be absent the quantity of toast or bread may be gradually increased to double the amount. Such cases are, however, exceptional. As a rule the sugar, though diminished, persists; it may have been 10,000 or 12,000 grains before dieting, and afterwards falls to 2,500 or 3,000 grains. Here I proceed in the same way, giving first the milk and then the potatoes, and if there is no return of distressing symptoms I do not retrace my steps because there is some moderate increase of sugar, but watch the body weight, and I am satisfied if that shows no loss, while generally it shows a gain. In these cases I keep the patient on this diet for many weeks before venturing to make a trial of ordinary bread, and often the patient has to be content to do altogether without it. I prefer to increase the potatoes, for although physiology has so far given us no explanation of the fact, there is considerable difference in

the behaviour of the various sugars and starches. Thus glucose and cane sugar appear more readily in the urine than lactose and levulose, and I am convinced that the starch of cereals is for some reason more productive of glycosuria than that of potatoes. Levulose which can now be obtained for diabetics, is not of much value from the patient's standpoint, except, perhaps with children, who crave for sweetening agents, yet for this purpose it is inferior to saccharine. As a means of adding carbohydrate it is expensive, but can be usually assimilated if given in not greater quantity than one and a half ozs. daily.

I have not laboured very much to prove the advantage of a more liberal diet in diabetes, because it appears to me that if it can be done safely, everyone must admit its advantages I do not care to dwell on the repulsiveness of ordinary diabetic diet, on its indigestibility, its danger when albuminuria is present, or upon its alleged action in producing acetonæmia; but I will only add that I have been treating patients on this plan for some years with satisfactory results. I admit that the same ends are often attained upon the ordinary plan as the result of compromise between doctor and patient, but at some loss of medical dignity, or at some private sacrifice of the doctor's own opinions. In urging the adoption of a standpoint from which concessions would be voluntary and given with good grace, or withheld for reasons that the patient could appreciate, I am asking your support for a method which has already many open advocates on the Continent of Europe, and probably many silent friends in England and in America. In France, Worms and Barth have expressly recommended the plan here proposed—namely, to commence with strict diet, and add carbohydrates in such quantities as experience may show that each patient can assimilate, while similar views have been upheld in Germany by Hirschfeld and Leo. During the last few years, in papers or speeches at societies the addition of carbohydrates to diabetic diet has been supported by Leyden, Klemperer, Bouchard, Dujardin-Beaumetz, Œttinger, Charrin, Lindemann, Mai, von Noorden, Grube and others. If I have failed to convince you, the fault lies with the advocate and not with the cause, which in more powerful hands must in the long run triumph over a system which struggles to keep up appearances, but is in reality either a cruel blunder or a hollow sham.

Dr. Sydney Coupland felt that it was most difficult to debate the full and scientific exposition of the subject given by Dr. Saundby, who had advocated the careful regulation of the amount of carbohydrate permissible to the diabetic, and shown that in the so-called "diabetic *régime*" all carbohydrate food could not be excluded. Diabetes pre-

sented itself under so many forms that all rules of treatment had to be adapted to every individual case. Moreover some responded more readily than others to diabetic treatment, although mostly it effected more or less notable diminution in the amount of sugar excreted, but very rarely caused its entire disappearance; some cases were even barely affected by it. He mentioned a case recently under his care in the Middlesex Hospital—not a severe case, and in an elderly woman—where, however, dietetic restriction did not effect the complete disappearance of sugar in the urine, which followed shortly after codeia was administered, the glycosuria returning on ceasing the drug without further change in the diet. Such an experience was not uncommon with other drugs, and yet it is impossible in any given case to predict that it would be encountered. Much had yet to be learnt of the pathology of diabetes before a rational treatment could be arrived at. In conclusion, he referred to the unexpected manner in which acetonæmia arose, due to physical or mental fatigue, and he thought this terribly fatal complication might be hastened by a too abrupt restriction of diet; so that in hospital practice it was perhaps wise to wait a few days before adopting this *régime*.

Dr. Shingleton Smith expressed his belief that there was greater danger in too much latitude in diet than in too rigid restriction; that until the sugar has disappeared from the urine the restriction from carbohydrate food must be absolute unless some complication necessitates a change. Compromises are not to be admitted at first, but as soon as the sugar has been reduced below 1 per cent. then some latitude may be admitted; and thereafter the patient should be allowed as much latitude as may be possible. Drugs are of secondary importance, and the dietetic is the one all-important point in the treatment of the disease. Every case must be a close and continued study, but some such routine diet as that suggested by Dr. Saundby must be maintained continuously. Latitude in this respect is likely to be followed by more or less speedy disaster.

Dr. E. Duncan (Glasgow) desired to say that in his experience the estimation of the amount of sugar in the urine was not the most important point. It was quite possible to diminish the sugar in the urine and starve the patient. The estimation of the body weight and of the muscular strength was quite as important as elimination of the sugar in the urine; in cases of diabetes from extensive disease of the pancreas, it is difficult to see that any treatment can do permanent good. But there is a large class of neuroginous cases in which the excretion of sugar in the urine depends on the loss of power in the sugar-consuming cells to absorb and utilise the sugar in the blood. In these cases he believed that restriction of the diet was absolutely

essential, particularly in young persons. Rest from over-work was essential to these sugar-consuming cells, and was always followed by improvement and ultimately recovery of power and strength.

Dr. TYSON (Philadelphia) said: Whatever may be the etiological and pathological difficulties in the way of a thorough understanding of diabetes mellitus, and the consequent obstacles to a rational treatment, practically, in my experience, the cases fall very easily into one of two categories for treatment—the mild and severe. I include in the mild cases all those in which the glucose is removable from the urine, and presumably from the blood, by dietetic treatment only. In the severe cases I include all those whence the sugar is not thus easily removable. Of great practical importance is the fact that, if neglected, the mild case may pass over into the severe one. For the first class of cases the dietetic treatment may be regarded in a sense curative; for it is certainly true that as long as the urine of such a diabetic is free from sugar he is practically well. I believe this is acknowledged by all who have had very much experience in treating the disease. The degree of rigidity in diet required varies, of course, with the cases. In some the exclusion of the pure carbohydrates alone, such as sugar and starches, is sufficient. In others all kinds of bread except the purest gluten—which is at once difficult to obtain and most unpalatable as a bread—must be omitted. In a large number of such cases a very considerable latitude is permitted in the use of vegetables, and it goes without saying that a diet so little restricted is totally without disadvantage to the patient. It has happened to me in a few cases that a continuance of such a diet for some time has apparently resulted in a cure—by which I mean that the patient has subsequently been able to use an ordinary mixed diet without return of sugar. It may have been that in these instances Nature has been working a cure which she was unable to make on the ordinary diet. In other cases such improvement as that just referred to has been followed sooner or later by a relapse, in which, however, the same treatment again sufficed to bring about the same change for the better. In a certain other proportion of cases such a moderately rigid diet does not altogether remove the sugar, but reduces it to such a small percentage—say below 2 per cent., or 1 to 10 gr. in the twenty-four hours—that the patient is still practically well, and can go about his business as though nothing was the matter, though perhaps in strict truth such a patient has a tendency slowly to get worse. In such a case, too, I consider it a matter of the extremest importance that at intervals of, say, a month he should be put on a diet sufficiently rigid to take out all the sugar, and it often happens that such diet must be purely albuminous. To live upon such a diet for one, and

even two days if necessary, is not only harmless to the patient but also in no way a privation, and, so long as I can influence the urine of my patient, I regard him as perfectly safe. It does not seem to me worth while in such cases to consider the question as to whether a proteid diet is harmful by reason of any tendency to produce diacetic acid or allied toxic substance, because it is quite impossible for such substances to develop in toxic quantity in the small time during which the treatment is carried out. Let us take, however, the second class of cases, in which even the most rigid proteid diet, while it will influence the quantity of sugar secreted, does not get rid of it altogether. In these cases even the proteid radicle is split up into products, of which glucose is one, and it may be, too, that even the body albumen shares the same fate. It is well known that the addition of codein or opium to the treatment will have a useful effect; but, as I understand it, we have to do to-day only with a dietetic treatment. The problem at once becomes a more difficult one. It is to be remembered that a proteid diet still influences the quantity of sugar, but it does not take it all out of the blood. The problem is, however, rendered more simple in practice. No patient, in my experience, will submit to a pure proteid food for any length of time. Hence a certain proportion of carbohydrates in the shape of vegetables must be allowed. The question, according to some, remains. Is there any reason for modifying the diet at all in these cases? In my mind there is; for, apart from its uselessness as a force producer, and throwing out of consideration the older view that diacetic acid is, and allied substances are, direct products of sugar metamorphoses there are certain harmful effects due to sugar in the blood alone. One of the most noteworthy of these is diabetic cataract and a general degenerate effect on the tissues due to long saturation with sugar. Again, the polyuria being partly, at least, due to the effort of the system to rid itself of the sugar, is at times so annoying a symptom as to worry and exhaust the patient. So far as possible, therefore, I would still restrict even the members of the second category of cases to a diet containing a minimum of carbohydrates. In view of the fact that a total proteid diet continued more than a few days is a practical impossibility, it may seem scarcely worth while to consider the question of the possible harmfulness of a pure proteid diet as a source of diacetic and oxybutyric acids, but as this question, although not a new one, has recently been raised again by a series of excellent papers by Dr. Munson, of the United States Army, some allusion ought to be made to it. Dr. Munson has shown by observations on a single case that the diacetic acid increased in the urine during the administration of a pure proteid food, although the glucose diminished, while the symptoms became aggravated. I

endeavoured to repeat Dr. Munson's experiments in a case in my wards before leaving Philadelphia, but I soon found I was not enough of a chemist to carry them to a conclusion in the short time allowed from the very general directions given by Dr. Munson. As the studies of skilled and well-trained physiological chemists have shown that the chief source of these substances is the splitting up of the body albumen in response to the inexorable progress of the disease, I cannot conceive that the small addition due to a proteid food would seriously aggravate the condition, while as I have already said the practical impossibility of continuing such food makes the question a less important one. In conclusion, I would say that my method in the management of an individual case is precisely that of Dr. Saundby, first to place the patient on the rigid diet, and having succeeded, as one commonly does with the majority of cases in eliminating the sugar, to add gradually one article of food after another, until as much carbohydrate is allowed as is consistent with the safety of the patient, as determined by the symptoms, in which I include permanently a glycosuria not exceeding 2 per cent.

Dr. JACOBI (New York) said there is a difference of dietetic treatment according to ages. The younger the patient the more they are endangered by carbohydrates. I never saw a child getting well of diabetes under any treatment, but I saw them getting worse quickly unless their diet was strictly proteid. It alone preserves them longer. I have allowed them carbohydrates toward the end of their lives, but for the sole purpose of making them more comfortable. Old persons in whom diabetes is apt to last five or twenty-five years tolerate and require some carbohydrates, particularly those who are emaciating. As to milk diet (not exclusive milk diet), I side with those who give it, not only Donkin's skim milk, but milk in every form—pure, boiled, skim, butter milk—not cheese, or whatever it is.

Dr. LINDSAY (Belfast) thought there was not so much real diversity of view amongst the speakers as might appear at first sight. He could agree generally both with Dr. Saundby and Dr. Shingleton Smith. It came to this—that we must distinguish between cases, allowing a large amount of dietetic liberty to elderly patients, very little to young patients. The clinical condition must be the chief guiding landmark, the state of the urine, though very important, being secondary. He had recently seen a case in a child in which a marked improvement in the urine was followed by the sudden death of the patient. He strongly condemned the exclusively milk diet, but thought that in elderly patients and in mild cases a certain amount of milk should be allowed on the broad principle of keeping up the patient's nutrition.

Dr. H. P. WRIGHT (Ottawa) said: I have been for years in the habit, based upon a somewhat extensive experience, more in private than hospital practice, of dealing with glycosuria and diabetes—the former an ailment associated with, usually, digestive derangement, and always with sugar in the urine, and having no known or discoverable pathological background; the latter having some evident serious pathological cause associated with emaciation, thirst, and sugar in the urine, with polyuria. The glycosuric cases usually occur in elderly people, and with an observed, though not restricted, diet, do well and enjoy fair health for many years. The diabetic cases do not do well under any treatment, though helped in many instances. I am therefore fully in accord with the views held by Dr. Saundby. I should like here to speak of another type of case, that I discovered accidentally in life insurance examination, and would like briefly to recite one case occurring in a healthy adult, 44 years of age, muscular beyond the average, and fully up to the usual weight. As he was a patient of my own I had many opportunities of examining his urine, and always found sugar, even when a "diet" was observed. In such a case I would like to know from Dr. Saundby, should a "diet" be observed, and particularly, if I may be allowed to sidetrack the question strictly under discussion, should such a patient be accepted by any life company?

The PRESIDENT stated how greatly he was impressed with the value of Dr. Saundby's paper in dealing with the question of the limitation of diet in diabetes, and with his protest as to a rigid routine of diet in all cases. He had showed how important it was to ascertain by observation the limits to which starch and sugar could be given with advantage to the patient, being guided rather by the body weight and nutrition than by the amount of sugar in the urine. By this means much better results were obtained than by the attempt to cut off all starch and sugar.

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AN EPIDEMIC OF TINEA TONSURANS SUCCESSFULLY TREATED BY TURPENTINE AND IODINE.

BY

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In February, 1896, I was called upon to treat twenty cases of ringworm of the scalp, which had occurred in a charitable institution of this city. The following plan was adopted.

A couple of large rooms were selected in a part of the building where the cases could be properly isolated and the children confined, except during meal-times and hours of exercise. A systematic inspection of all the children in the institution was then made, and all definite cases of the affection were immediately isolated, and suspected cases kept under careful observation until all doubt was removed. The children being all between the ages of six and ten years, there was no objection to having the hair closely cropped in either sex, and this was accordingly done by means of a pair of clippers such as barbers use. This proved a great aid in diagnosis as well as in treatment, for among the short hairs of uniform length a small area of scaliness, or any loss of elasticity of the hair itself, was easily detected. Each child was provided with an easily washed cap of white cotton, which was worn continuously in the house, and replaced by a lining of similar material in the hats or caps worn out-of-doors. The children had their meals in the common dining-room before the rest of the household, and were not allowed any communication at all with the latter. In this way, after the whole number had been inspected and infected cases separated, no new cases developed.

Owing to the length of time that many of the children had had the disease, the cases were more than ordinarily intractable. Thus, in six the whole scalp was infected, broken hairs and scales being found everywhere. In three, fully one-half the scalp, and in six, several good large patches required treatment; only five, or 25 per cent. of the whole number, had a small discrete spot or spots.

An attempt was made to determine the nature of the fungus, but it was only in part successful, owing to my not being able to make cultures on the proper medium. Where, however, the hair with its crop of spores could be obtained entire, it was not a difficult matter to determine whether the case was an endothrix or ectothrix, and the size

of the spores in the two varieties were measured by making a permanent specimen of an undoubted case of each and using this for purposes of comparison. Of the twenty cases, thirteen, or 65 per cent., were classed as microsporon Audoini; four, or 20 per cent., as trichophyton megalosporon endothrix, and the remainder, 15 per cent., could not be determined. This proportion of the two varieties corresponds very nearly to the results obtained by the examination of cases in the Montreal General Hospital. The large majority of our cases are due to the small-spore form.

The method of treatment adopted was as follows: After thoroughly cleansing the scalp with water and green soap, the hair is carefully dried and oil of turpentine rubbed in, and immediately after, while the turpentine is still wet, tincture, or liniment, of iodine is painted on. In the course of a few days a somewhat thick, dark brown, iodine-stained scale forms over the part, and it is necessary to remove this to carry on the treatment successfully. After considerable experience with various oils and soaps, I found that ordinary vaseline was the most effectual solvent here, as it is also in other scaly conditions of the scalp. Sometimes, in old, neglected cases, it is necessary to soak the hair over night with the vaseline, but even in these no difficulty is encountered in washing off the scales along with the vaseline in the morning. After removing the scales the turpentine and iodine is reapplied until such time as it is thought that the fungus may be destroyed. Then, after cleansing the scalp again, no further application is made if the broken hairs and other evidences of the disease have disappeared. The former site of the disease is carefully watched for some weeks, and, on the first appearance of scaliness or broken hairs, a second course of treatment similar to the first is carried out. The use of the microscope in detecting the very earliest reappearance of the fungus is imperative.

The frequency with which these applications could be made depended entirely upon the tolerance of the patient. In some of this series of cases a daily application was carried out for weeks without causing any discomfort, but in others the head rapidly became sore, and a soothing ointment or carbolic oil (1 to 40) had to be substituted until it was safe to go on again. In two of the series the treatment produced a pustular folliculitis; in two it caused no irritation; in the rest, after a longer or shorter interval, it had to be discontinued for a time. The curative agent in the treatment appears to be the turpentine. This was shown by a mistake made by one of the nurses, who misunderstood the directions and used only the iodine. The cases under her charge made no progress at all, and, not understanding the

cause, I went through a portion of the long list of remedies recommended in the text-books. On finding out, however, that a mistake had been made, I returned to the original treatment with most favourable results.

Besides the local treatment as described, it was the practice to wet the whole of the hair every morning with carbolic oil, 1 to 40. This was intended to protect against possible auto-infection. Whether this had the desired effect or not, in only one or two cases did any outlying spots develop while under treatment.

With regard to results, one case was cured in eight weeks, six in from ten to fifteen weeks, five in from fifteen to twenty weeks, and five in from twenty to thirty weeks. The others left the institution while the treatment was in progress. In one or two cases of apparent cure a small spot reappeared after the patient had left the isolation room, but it yielded at once to the former line of treatment. In two cases, where a rapid cure was urgently needed in order to allow the children to be sent away for their health, I used a paint of croton oil diluted with olive oil, 1 to 4, and made the application myself. Notwithstanding great care in producing the pustular folliculitis, and daily watching of the case, in one of these, the spots of baldness produced by the oil appear to be permanent. For several weeks after the children had been removed from quarantine an ointment, one part of unguentum hydrargyrum ammoniatum with three of lard, was applied to the scalp once or twice a week.

It is now over a year since the treatment ceased, and in all of these cases which have remained under observation there has been no return of the disease.

Clinical Lecture.

CLINICAL REMARKS ON TWO CASES OF GROSS CEREBRAL DISEASE.

BEING THE SUBSTANCE OF A CLINIC HELD IN THE ROYAL VICTORIA HOSPITAL ON MARCH 4TH, 1898.

BY

JAMES STEWART, M.D.,

Professor of Clinical Medicine, McGill University.

The two cases under consideration present features of an entirely different character. The first is characterized by general cerebral symptoms, as headache, vomiting and optic neuritis. In the second case there is an absence of such general symptoms, but a multitude of symptoms of a paralytic character.

CASE I.

Severe occipital headache—General convulsions—Vomiting—Optic neuritis—Slow cerebration. Gradual disappearance of the above symptoms. The fundus presenting atropic appearance—Ataxia—Loss of knee-jerks. (Reported by Dr. Robins, Senior House Physician.)

H. B., a schoolboy aged 9, of French Canadian origin, was admitted to the Medical Wards of the Royal Victoria Hospital on Feb. 8th, 1898, complaining of severe occipital headache, dimness of vision, constipation, and colicky pains in the abdomen.

The history of his illness, so far as it could be obtained from his mother, is as follows:

On Jan. 5th, 1898, the patient was feverish, and complained of epigastric pain and slight headache. On the following day (Jan. 6th), the child had a cough. There was pain in the elbows, and he had some nausea and vomited once. He was seen the same day by a physician, who pronounced the trouble to be bronchitis and dilatation of the heart. There was some pain in the chest on coughing. Hæmaturia was not present, and the patient had no sore throat.

The fever lasted only two days, and the cough passed away in a fortnight.

The patient vomited seven or eight times in the five weeks preceding his admission, the last occasion being a week before admission (Feb. 1st). The vomiting generally took place after food. It was

preceded by nausea and epigastric distress, and the vomitus consisted only of food taken.

Crampy abdominal pains were of frequent occurrence, and the bowels were very costive, usually requiring enemata to make them act.

About Jan. 15 the boy complained for the first time that he was unable to see clearly. The dimness of vision became progressively worse until the time of his admission (Feb. 8), when he was only able to tell the difference between light and darkness.

Persistent occipital headache, liable to exacerbations and severe enough at times to make the child scream out loud, was a troublesome feature throughout the illness up to the time of his entering the hospital.

Vague pains in the extremities were occasionally complained of before his admission.

He was kept in bed almost all the time from the onset of his illness up to the time of admission.

The child was said to have lost some flesh.

There were no convulsions, and the relatives never noticed paralysis of any part or any inequality of the pupils.

In the personal history, the only facts of importance obtained were that the child had been liable to cough during the winter months for four or five years, and that a lump would come behind one of the ears (? left) in winter. This never burst, and there was at no time any discharge from the ears.

There was no history of hereditary disease obtained, though the mother at the pregnancy immediately preceding the patient's birth miscarried in her second month.

His condition soon after admission may be described as follows :

The patient was found to be a well-nourished, slightly anæmic boy of 9 years. The face had a stolid appearance. Its expression denoted suffering. The pupils on entrance were rather dilated, the left being the larger, but 36 hours later the right was a little larger than the left. He could assume any position in bed. Sleep was somewhat interfered with by severe occipital headache.

Pulse, 106 ; respiration, 24 ; temperature, $98\frac{4}{5}$.

The post-cervical glands were readily palpable, but not decidedly enlarged.

In the circulatory system the only abnormalities noticeable were an occasional reduplication of the first sound at the apex and a decided accentuation of the second sound at the pulmonary cartilage.

Nervous System.—The mental state was dull, but there was no

stupor and no coma. Speech and articulation were normal, Cerebration was rather slow, but the child appeared to understand what was said to him.

Sleep was broken by the intensity of the headache complained of. It was chiefly occipital, and was liable to acute exacerbations which caused the patient to cry out.

Voluntary power in the extremities was normal. Nutrition was good and no hypertonus could be noticed.

Coördination could not be accurately tested, owing to the mental dulness and to the boy's inability to walk.

No convulsive movements could be noticed, except some twitching of the left angle of the mouth at times. These movements closely resembled in character those obtained in habit spasm.

Except the kneejerks, which were not obtained, the reflexes were all active. There was obstinate constipation, but no other change in the organic reflexes.

No subjective sensory symptoms were complained of, and sensation was apparently normal all over the body.

The only one of the cranial nerves affected, so far as they could be tested, was the optic nerve. The child was almost wholly blind. He could distinguish the presence of an object held close to his face, but was unable to count fingers. There was an intense optic neuritis.

The other systems were negative to physical examination, and the urine was normal.

Subsequent Events.—For some days after admission the patient's headache remained severe. Then it gradually abated, and at the end of three weeks (March 1) had entirely ceased.

Vision improved gradually, and by March 1 patient could readily count fingers and identify playing cards, though he was unable to read even fairly large print.

The bowels remained obstinately constipated for two weeks (till Feb. 20). Since then they have been fairly regular.

For three weeks after admission (up to March 1) the patient had some tendency to retention of urine, necessitating frequent hot hip-baths, and occasional catheterisation.

During the four weeks following admission (till March 8), patient vomited three times. The vomiting usually took place while taking food or soon after. As a rule it was somewhat explosive, was not preceded by nausea, but the patient said he felt sick afterwards. The vomitus consisted only of food taken.

Patient has for the last week (since March 1) been able to walk.

His gait is somewhat ataxic, the ataxia being of the cerebellar type.

The amount of ataxia present varies somewhat from day to day. There is slight swaying when the patient stands with his heels together and eyes closed.

No further convulsive movements have been noticed, and no paresis. Inequality of the pupils still persists. The right is the larger.

The temperature has been slightly elevated since admission, ranging between 98° and 100°. The pulse has varied between 76 and 120.

The symptoms present in this case point unmistakably to a gross brain lesion, but there were at first no localizing symptoms of sufficient distinctness to warrant a diagnosis of the situation of the lesion. Since the disappearance of the headache, the boy has been able to go about, and it then became manifest that his gait is somewhat ataxic and of a cerebellar type. This symptom together with the absence of the knee jerks, the severe occipital headache, and the early and very intense optic neuritis point on the whole to a cerebellar lesion. The symptoms are, however, of not sufficient weight to justify a physician in advising surgical interference.

There is not sufficient evidence to be gained from his past and family history, and from the onset, nature and course of the symptoms, to enable one to arrive at a conclusion as to the nature of the lesion.

CASE II.

Slow and irregular development of paralysis of the right arm and leg—Paralysis of the left external rectus—Slight weakness of the right external rectus—Paralysis of both motor and sensory branches of the left fifth nerve—Pain sense in the region of the left fifth exaggerated—Temporary impairment of hearing on the left side. (Reported by Dr. McDougall, House Physician.)

P. McM., male, æt 13, school boy, was admitted to the Royal Victoria Hospital, November 6th, 1897, complaining of weakness of the right arm and leg, and double vision.

One day in July, 1897, when returning home, after playing a game of lacrosse, the patient noticed that the right side of his body was a little weak. The leg on that side easily tired and the toe tended to catch on objects lying in his path. With his right hand he was not able to hold his lacrosse stick as firmly as usual.

A few days later he "began seeing double;" at first but occasionally, but about the time of his admission to the hospital diplopia had become constant, and his friends noted that "his left eye turned inwards."

Within two months from the onset of the trouble, the weakness had developed so that the patient had a very decided "limp" when walk-

ing, and the right foot was dragged forward, or swung outward in order to clear the ground.

Frequently the toe caught on the ground, causing him to stumble. The right arm hung by his side and the hand was completely paralyzed.

He never had pain, loss of consciousness, nor convulsion.

There was nothing to note in his personal history, save an attack of measles in infancy and pneumonia two years ago. There was a good family history.

On admission the patient was noted to be an intelligent, and well nourished boy of average size.

Temperature 98$\frac{2}{5}$° Fah. Pulse 72. Respirations 20 per min.; weight 82$\frac{3}{4}$ lbs.

The glandular system was normal.

The skin over the lower half of the right upper and lower extremities was moist, cool, and somewhat cyanosed; elsewhere it was warm and dry. (No scars nor eruption.)

Nervous System.—The cerebral and mental functions were normal.

Voluntary motor power on the right side, generally, was greatly diminished and the gait was hemiplegic. There was complete paralysis of the muscles of the wrist and fingers, and the remaining muscles of this extremity were more markedly affected than the corresponding ones of the lower extremity.

A barely perceptible weakness of the muscles at the angle of the mouth on the same side was noted.

There was moderate convergent strabismus of the left eye, and it (the eye) could be but very slightly rotated to the temporal side. The muscles on the right side were flabby, but no wasting could be made out. The deep reflexes on the right side were increased.

There was absence of the pharyngeal reflex, but the remaining reflexes were normal.

Co-ordination as far as could be tested was normal.

Excepting pharyngeal anæsthesia, sensation was normal.

The special senses were normal save for diplopia due to paresis of the left external rectus muscle.

The fundi occuli were repeatedly examined and found normal.

The circulatory, respiratory, digestive, and urinary systems were normal.

The patient remained in the hospital for five weeks. During that time he gained six pounds in weight, and could at the time of his discharge from the hospital use the right hand a little. The muscles of the lower extremity had so recovered that he could walk much better than at the time of admission.

For about four weeks after leaving the hospital his condition remained the same; then gradually the weakness began to increase, and on Jan. 28th, 1898, he again came to the hospital. He walked with greater difficulty than ever before; the right hand was paralyzed and the right arm muscles weakened.

The left external rectus muscle was completely paralyzed, and double vision was constant.

There was no muscular wasting.

The muscles of mastication on the left side were almost completely paralyzed. Chewing was performed on the right side only. The left masseter and temporal muscles did not swell up and harden when the teeth were strongly brought together.

On protruding the lower jaw it deviated to the left side. Food accumulated between the cheek and the teeth on the left side and the patient was unconscious of its presence.

The left external rectus muscle was completely paralyzed. (The eye was strongly rotated to the nasal side and could not by voluntary effort be turned outward.)

About March 1st, it was noticed that there was slight weakness of the right external rectus and some lateral nystagmus.

The muscles at the angle of the mouth on the right side were somewhat weak, and on smiling the mouth moved to the left side, and the left naso-labial furrow markedly deepened, while on the opposite side it was barely preceptible. The muscles of the left side of the face above the angle of the mouth were slightly but definitely weakened excepting the corrugator supercilii and occipito frontalis, at times it would appear that they were perhaps a little involved, but the evidence was not sufficient to give certainty.

Patient stated that for a few weeks previously, tears from time to time flowed over the left cheek, and the eyelids did not come together so firmly as on the right side.

For two months previously the patient noticed that the saliva tended to overflow the lower lip and trickle down the chin; at the same time his speech changed somewhat, owing to inability to use the lips as well as formerly in articulating.

The organic and the superficial reflexes were normal. Myotatic irritability was slightly increased on the left side of the body, and very markedly so on the right side. On this side (the right) the patellar reflex was greatly exaggerated. The slightest tap threw the leg in a spasm. Rectus clonus was well marked on this side, but no ankle clonus could be made out.

There was some constant rigidity of the right arm and leg.

Co-ordination appeared normal.

Sensation over the trunk was normal.

Tactile anæsthesia was noted over the left half of the face, and also of conjunctiva, nares, lips, hard and soft palate, tongue, gums and buccal mucous membranes on this side.

Anæsthesia of the pharynx had disappeared and the pharyngeal reflex could be elicited.

Sense of pain (using pin or electric brush) was much more acute on the left side of the face and anæsthetic mucous membranes than on the effected side.

Sense of smell on the left side was impaired.

Vision was good excepting diplopia.

The false image was projected to the left. Both images were seen on the same plane and vertical.

The fundi were normal, and have remained so.

Taste was normal.

Hearing was decidedly impaired on the left side but is now (March 9th) nearly normal.

(The remaining cranial nerves were normal.)

Further there is nothing to note which differs from what was observed when the patient was admitted in November, 1897.

The marked motor disturbance in this case, enables a general and topical diagnosis to be readily made. A pontine lesion will explain the paralysis of the extremities on one side and the fifth and sixth nerve paralysis on the opposite side. The disturbance of the 7th was so slight and irregular that little weight can be attached to it. Further, the two sides of the face are not symmetrically developed. What significance is to be attached to the temporary disturbance of the functions of the left eighth? I am unable to give any satisfactory explanation to this question. As in the first case it is difficult to come to any satisfactory conclusion as to the nature of the lesion.

Both patients have been under treatment since their admission to hospital. In the first there is very decided improvement, the lad is now able to go about. Seemingly there is an arrest of the progressive march of the trouble, which was a prominent feature during his early stay in the hospital. Arrest of cerebral morbid growths is more frequently met in tuberculosis formations than in the other varieties.

In the second case iodide of potassium has had no beneficial influence whatever.

Case Reports.

ACUTE MULTIPLE OSTEOMYELITIS.

BY

C. F. Wylde, M.D.

Wm. P., aged 13 years, first complained of feeling ill on Thursday, September 23rd. His mother noticed him walking a little lame, and he had headache. About ten days previous to this he had a fall, his right knee striking the ground and causing an abrasion of the skin over an area of about one inch in diameter at the outer side of the knee-joint, and over a small portion of the upper border of the tibia. He did not complain of any pain from the fall. The abrasion healed quickly, and at the commencement of his illness there was a small dry scab, adhering to the newly formed epidermis. There was no other sign or history of injury.

On Friday, September 24th, he was sent home from school, complaining of headache and pain in the limbs. The next day, when he was first seen, his temperature was 104°, pulse 122, coated tongue, anxious expression ; there was slight delirium and restlessness. He had headache and aching limbs, and pain on attempting to move. There was tenderness on pressure in the right iliac fossa. Typhoid fever was suspected, although his mother said he had had it some years previously. There were no rigors or sweats and no enlargement of the spleen. He continued to get worse. The delirium continued and there was great restlessness.

On September 28th, there was first noticed a small, dusky, red, inflamed spot over the spine of the right tibia, slightly swollen and painful on pressure. This rapidly extended downwards over the upper part of the anterior surface of the tibia, and the next morning was boggy and pitted on pressure. On the inner side of the lower third of the left femur was an oval swelling, hard and painful on pressure. There was also a small, inflamed spot over the posterior surface of the olecranon process of the right ulna, which in a few hours showed pitting on pressure. The boy also complained of pain in the left shoulder. About this time was noticed a few moist *râles* at the base of the right lung.

As the condition of the patient was bad a consultation was suggested to the parents, and Dr. F. G. Finley was called, who diagnosed the case as one of acute multiple osteo-myelitis.

At no time during the illness were the joints affected. The patient was removed to the Montreal General Hospital on the evening of the 29th. Operation was refused by the parents, owing to the boy's desperate condition. Antistreptococcic serum, cc. ii., was injected, but without effect.

On the morning of the 30th there was noticed a small, red spot over the 3rd left metacarpo-phalangeal joint. A friction rub was heard at the base of the right lung.

The boy gradually sank and died about noon. Post-mortem examination could not be obtained.

IDIOPATHIC GASTRIC CRISIS.

BY

N. D. GUNN, M.D.,

Demonstrator of Histology, McGill University.

Mrs. C. D., æt. 26, husband living, has borne two children at full term and had one miscarriage. She has five sisters and one brother living and well. Her mother was at one time confined in an asylum, but at present is well. Her father is living and well.

The patient has always been hysterical. For some days before the onset of vomiting she complained of ringing and deafness in one ear. On June 14th, 1895, she suffered from a violent attack of headache, followed by great retching and vomiting. Nothing could be retained on the stomach. The temperature was 99°, and the pulse 84. There was no abdominal tenderness. Morphine hypodermically, even in half-grain doses, failed to control the vomiting. An examination of the vomited matter showed no lactic acid, but the hydrochloric acid was one and one-half times the normal amount. On the fourth day everything was stopped in the way of medicine and the stomach washed out once a day and nutrient enemata administered four times in the twenty-four hours. This was continued until the eleventh day, when the patient (she had no nurse) told me her bowels had not moved for four days. A high enema off hot water and glycerine failed, and olive oil was tried with a similar result. There was no distension and no tenderness, so I waited. Vomiting continued every half hour until the 14th. The bowels moved in the meantime, though this was denied by the patient. On the 14th I began gavage, giving a pint of digested milk at each feeding. Vomiting ceased promptly and the patient was soon up.

There was no rise of temperature during the whole illness above that recorded on the first day, and no albumin or sugar in the urine.

On October 28th, 1895, vomiting began again after four months normal gastric action. There was no elevation of pulse or temperature. Vomiting occurred every half hour or hour night and day. The patient's spirits were good, and there was no pronounced wasting. Gavage was tried at the beginning but failed, and rectal feeding was then adopted, and in ten days the stomach again resumed its normal functions. Another attack followed in August lasting ten days.

There was in this case no organic nervous affection such as tabes The vomiting was periodic ; the gastric secretion changed and increased in amount. In many particulars the case resembles those described by Rossbach under the head of "gastroxynsis" and undoubtedly expresses some irritation of the gastric nerves.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

The Lingual Tonsil as a Cause of Cough and Paroxysmal Dyspnœa.

BEVERLEY ROBINSON, M.D. "Etiology and treatment of certain kinds of cough."—*The Amer. Journal of Med. Sciences*, Nov. 1895.

MAYO COLLIER. "A case of lingual varix with severe paroxysmal dyspnœa."—*West London Medical Journal*, July, 1897.

The general practitioner is under considerable obligation to these two observers for directing attention to the lingual tonsil as a cause of distressing and obstinate cough, as well as of dyspnœa, sometimes associated with hæmorrhage.

As shown by Dr. Robinson, many cases of frequent dry paroxysmal cough, from which but little relief is afforded by anodynes, are due to the abnormal enlargement of the lingual tonsil.

By the aid of the laryngoscope these cases become clear, the epiglottidean fossa being found filled up and distended by a rounded mass of lymphoid tissue. When this mass encroaches upon the free border of the epiglottis, cough is most troublesome.

Varices are frequently found upon its surface. Disturbances of the circulation may account for the paroxysmal character of dyspnœa as well as of cough.

Such cases are more frequently found in women toward middle life; sometimes associated with menstrual derangements. Not infrequently the subjects of this enlargement experience a feeling of fulness or choking, and constriction of the neck, or as if some foreign body were lodged in the throat.

The treatment consists first, in the use of sodium salicylate internally, and the local application of the compound tincture of iodine. If this treatment is not followed by good results within a short time,

the tonsil may be partly destroyed by the galvano-cautery, at successive sittings.

The Pathology and Treatment of Emphysema.

HARRY CAMPBELL, M.D., F.R.C.P. "The pathology and treatment of emphysema."—*West London Medical Journal*, July, 1897.

Dr. Campbell holds that the two essential factors contributing to the enlargement of the chest in hypertrophous emphysema are: (1) Defective pulmonary elasticity, and (2) Dyspnœa.

He says, in consequence of the former, the suction action of the lungs is diminished, and the thoracic elevators no longer properly antagonised, gain the upper hand and expand the chest, which may thus go on enlarging for years before any decided symptoms develop.

"Sooner or later dyspnœa supervenes, and inasmuch as this excites the inspiratory more than expiratory muscles, there is now a still greater preponderance of the expanding over the contracting forces."

Hence the hypertrophy and permanent shortening of the inspiratory muscles, and the fixation of the chest in the inspiratory position. The course then, according to Dr. Campbell, is:

(1) Defective pulmonary elasticity.

(2) Dyspnœa.

(3) Increased thoracic expansion, due to contraction of the thoracic elevators.

(4) Emphysema.

With the increased thoracic expansion there is a strong tendency toward fixation, and thus the *expiratory range* is diminished.

The treatment is considered under three divisions:

(1) Preserve the elasticity of the lungs.

(2) Prevent overaction of the costal elevators so as to check thoracic expansion.

(3) Maintain the normal mobility of the thorax.

Under the first division, the treatment may be summed up in a word. Avoid overstrain and diseases which weaken pulmonary tissue. The second indication for treatment is in part preventive, and is met by avoiding all causes likely to produce dyspnœa. When the earliest phase of the disease is recognized, it is recommended that expiratory exercises should be taken to antagonise the inspiratory effort.

They consist chiefly in making as deep expirations as possible. Expiration through the open mouth, the body bent forward, is recommended. Then exercises for the abdominal muscles are recommended.

The measures adopted to secure the second indication, will tend also to meet those of the third, viz.: to maintain the normal mobility of

the thorax. If fixation is established to any degree, some good results may follow, massage of the chest wall, external compression of the thorax during expiration, breathing into a rarefied air chamber, and inhaling condensed air.

Consumption.

ARTHUR RANSOME, M.D. "Consumption: A filth-disease."—*The Medical Chronicale*, Manchester, Dec., 1897.

Dr. Ransome, after quoting from Sir John Simons' account of the class of complaints which he brands as filth diseases, among which consumption does not appear, urges that according to its similarity with enteric fever in its origin and means of propagation, it should be classified *as a filth-disease*. For example, he says that the specific organism in each disease is a bacillus. They are both "facultative saprophytes." Neither disease is directly infectious. They are spread by means of excretions from the body.

Since the general improvement of drainage and water supply both diseases have greatly declined. Within sixty years consumption has been reduced to one-third its former prevalence, and enteric fever to one-fourth or even less.

Dr. Ransome would further establish the reasonableness of his claim by evidence: (1) Statistical, and (2) Experimental.

Under the first he shows that between 1838 and 1894, according to the returns of the Registrar General in England, there has been a decline from over 3,800 per million, to 1,380, or an army of 75,000 lives in a year. Again, this view is supported by a study of this disease in sections. Its incidence is seen most frequently in crowded unsanitary areas, where all kinds of filth prevail, especially air sewage. That poverty, weakness and bad food, cannot account for the number of cases in such localities, is shown by the frequency of deaths from consumption among soldiers, men with good constitutions, who were exposed to "bad ventilation and imperfect drainage of the barracks."

Ordinary filth is not sufficient, but a specific form of impurity such as that afforded by phthisical expectoration is necessary, as shown by Dr. Coret, in statistics relating to the German nursing orders. The dirty ill-ventilated and ill-lighted rooms are favourable to the growth of the tubercle bacillus; sunshine destroys them.

Statistical evidence has been strengthened by that afforded by experiment.

The observations of Villemin and Schottelius show that the inhalation of tuberculous matter, or its ingestion, convey the disease, and also that it may be inoculated.

Koch showed that dried pulverized tuberculous sputum was most infective.

The author has also shown, by the aid of Prof. Dreschfeld, that poor ventilation and moisture favoured the preservation of the virulence of tuberculous sputum, while exposure to air and sunlight destroyed the virulence. Quoting from the "Weber-Parkes" prize essay, Dr. Ransome shows that the condensed vapour from healthy breath, phthisical breath, cellar air in Southampton, cellar air at Bournemouth, weaver's shed in Blackburn, and pure ground air proved excellent cultivating media, simple glycerine agar, potatoe, or pure filter paper serving as the supporting medium.

Dr. Ransome says: "It may then be regarded as certain that the bacillus can grow outside the body whenever it can get hold of a sufficiently impure soil, and whenever its activity is not interfered with by the adverse conditions of abundant air and daylight."

Further, the writer points out the danger to delicate people which exists in the theatres. Such buildings, poorly ventilated, excluding the sunlight, frequented by many tuberculous subjects, are often mere death-traps to susceptible people. Churches which are poorly lighted are also dangerous.

The article closes with a review of the means to be adopted for the suppression of tuberculosis, measures similar to those directed against typhoid.

(*a*). Notification of the disease, especially those in whose sputum bacilli have been found, and those who are careless and likely to spread the infection.

(*b*). Disinfection of excreta.

(*c*). Hospital treatment.

(*d*). General sanitary measures.

Among the latter the disposal of "*air sewage*," is of greatest importance.

W. F. Hamilton.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Pressure Pouches of the Œsophagus.

BUTLIN. *British Medical Journal*, Jan. 1, 1898. p. 8; *Medico-Chirurgical Transactions*, Vol. LXXII., 1892, p. 299.

CHAVASSE. *Transactions of the Pathological Society of London*, Vol. XLII., 1891, p. 82.

WHITEHEAD. *The Lancet*, Vol. I., 1891, p. 11.

Towards the close of 1890, Mr. Butlin was consulted by Captain X., aged 48, "on account of symptoms of an œsophageal pouch, namely, the return of undigested particles of food some time after they had been taken, and the presence of an ill-defined swelling on the left side of the neck, which became larger after a meal, and out of which gas and particles of food could be pressed."

There were no signs of stricture of the œsophagus, and his general health was good.

Mr. Butlin learned that Professor von Bergmann had operated upon a similar case with success. The case is published in full in the *Archiv. f. Klin. Chirur* (Bd. XLIII., Hft. 1).

Mr. Butlin removed the pouch by operation on the 14th June, 1892, following the directions laid down by Professor von Bergmann. The captain made a good recovery, and the wound was healed by the middle of July. The specimen is in the museum of St. Bartholomew's Hospital. Mr. Butlin operated on another similar case in November, 1895, and has seen six cases in all.

The pouch is not covered by muscle, although a thick ring of muscle is formed at the neck of the pouch.

The elasticity of the first pouch removed was very considerable. It could be dilated to two or three times its natural size.

No cord was discovered attached to its free extremity, such as is sometimes attached to the base of a dermoid cyst. They may be regarded as pressure pouches. The first symptoms in all his cases occurred in adult life, and the frequency was much greater in men. Mr. Butlin is strongly in favour of the view that these pouches have their origin in defective development. "Their constant occurrence at the same part of the alimentary canal, and where it is supported by

the vertebrae behind ; their shape in this and many similar cases ; their tendency always to pass out towards the left side ; the slit-like opening through which they communicate with the alimentary canal ; the very great rarity of their occurrence in spite of the careless habit of many people in eating ; the resemblance of this pouch to some of the Meckel's diverticula of the intestine, were very marked ; and although most of the Meckel's diverticula are covered throughout with muscular fibre, they are not all so to the free or distal extremity.

The true pressure pouch is almost invariably situated at the junction of the pharynx with the œsophagus, and it projects almost invariably at the back of the œsophagus between the gullet and the spine. As it enlarges it bulges on one or both sides of the neck, below the level of the cricoid cartilege ; if the bulging is on one side, it is almost always on the left side.

Return of fragments of undigested food is the one constant symptom in every case ; not immediately after the food has been taken, but many hours afterwards. For instance, one patient said that he had coughed up a fragment of fish which he had taken several days previously, and he was quite sure of this, for he had not taken any fish since. The fragments may be coughed up or choked up, and sometimes liquids taken during the evening will run out and make the patient cough, when he changes his position, during the night.

Pressure on the side of the neck, in the posterior triangle, usually on the left side, causes fragments and liquid to return into the mouth. Pressure may cause the escape of gas which develops and collects in the pouch. This gas sometimes causes annoyance by gurgling up at frequent intervals during the movement of the head and neck.

A bougie passed into the pouch is arrested eight or nine inches beyond the teeth. The bougie may be passed on by the opening into the stomach.

Wasting and loss of flesh are not common until late in the history of the case. Eventually, however, emaciation begins and gradually increases. Zenker and Ziemssen found that of twenty-seven cases taken from medical literature, in which the diagnosis was confirmed at the autopsy, that thirteen died of the results of the pouch ; eight of them died of other diseases ; while the cause of death of the remaining six was not stated, and the manner of death has been in most cases by slow starvation. Diagnosis of œsophageal stricture has sometimes been made, probably, partly because the bougie entered the pouch instead of passing down the œsophagus. With the object of relieving the symptoms, gastrostomy has sometimes been performed.

In Mr. Chavasse's case the patient, a man aged 49, died two days

after the completion of the operation of gastrostomy, of exhaustion and hypostatic pneumonia.

Mr. Whitehead's patient lived a little more than five years after gastrostomy had been performed. Her symptoms began at the age of 40, and gastrostomy was performed eight years later, when the obstruction of the œsophagus was complete from the swelling of the pouch, and the patient was much emaciated. She got along well after her operation, gained in weight and was in good health, but tiring of her method of feeding, and thinking that her neck was well, she began to take food by the mouth and her gastrostomy wound closed. She died of starvation, due to recurrence of difficulty in swallowing.

The treatment is removal of the pouch.—The operation is said to be not a difficult one. An incision is made along the anterior border of the sterno-mastoid, with its centre opposite the cricoid cartilage. The dissection is then carried down between the trachea and œsophagus on the inner side and the great vessels on the outside. The superior thyroid artery is tied and the omo-hyoid muscle divided, and the pouch discovered lying behind the œrophagus at its junction with the pharynx and projecting a little towards the left side. It should be cut away from above downwards, and the edges brought together with silk sutures.

Mr. Butlin has operated twice, and one other case has been operated upon in London. Von Bergmann operated on one case, Billroth on one case, Mixtor on one case, and very likely others have operated. Only one case proved fatal and from an unexpected cause—suppression of urine.

Geo. E. Armstrong.

Ophthalmology.

UNDER THE CHARGE OF J. W. STIRLING.

Granular Conjunctivitis.

G. T. Stevens, M.D. "Suggestions regarding an element in the etiology of trachoma."—*Ophthalmic Review*, September, 1897.

Leopold Miller. "Bacteriology of trachoma."—*Wiener Klin. Wochenschrift*, No. 42, 1897.

Simeon Snell, F.R.C.S., Edin. "Electrolysis in the treatment of trachoma."—*Ophthalmic Review*, July, 1897.

M. Santos Fernandez. "Subconjunctival injections of potassium permanganate in trachoma."—*Revue d'Ophthalmologie*, October, 1897.

Ernst Neese. "The treatment of trachoma.'—*Deutsche Med. Wochenschrift*, No. 43, 1897.

H. Kuhnt. "The treatment of granular and tuberculous conjunctivitis."—*Deutsch. Med. Woch.*, No. 28, 1897.

The above are but a few out of the many articles on granular conjunctivitis which have appeared during the past year.

Stevens, following out his elaborate studies on the subject of heterophoria, considered that the pressure of the upper lid on the eyeball exerted to produce a change in the visual plane of the eye, as in anophoria, does act as an important factor in the production of trachoma. Anophoria certainly favours the development of the specific germ, if such be the immediate cause of trachoma.

Stevens asserts that he has observed in cases of trachoma, which have resisted other methods of treatment, a recovery following the correction of the anophoria, and that within a few weeks.

Miller has isolated a bacillus in cases of trachoma, which was similar both in form and culture results to the bacillus of influenza.

Miller does not claim absolutely the causative connection of this bacillus with trachoma yet.

Snell uses electrolysis in chronic cases, and bases his article on the experience gleaned from over a dozen cases. The negative pole is applied to the cheek, the lid is everted and the positive pole, which is probe shaped, is applied to the granulations. The current varies in

intensity from 3 Ma to 5 Ma. Before applying the poles, cocain is freely instilled, as there is some pain at the time, which forthwith ceases on shutting off the current. The platinum probe of the positive pole is well pressed on the palpebral conjunction over the granulations, and then firmly drawn along the lid—a frothy white track follows the platinum point.

This operation may be repeated every few days, as very slight reaction follows.

Snell considers the procedure as better than the sulphate of copper stick, or the expression of the granulations by forceps. As the treatment of this disease requires change from time to time, electrolysis can certainly be recommended as an alternative one.

Fernandez first injects a one per cent. solution of cocain into the cul-de-sac, followed in twenty minutes by an injection of permanganate of potassium solution of a strength of one to one thousand of water. He injects of this solution one half to one gram, and repeats in eight days or so—in the meanwhile using an antiseptic collyrium daily. Fernandez claims very good results.

Neese uses one to two per cent. solutions of creolin if there be not very marked pannus. He also favours close attention to the condition of the lachrymal canals, as they are frequently narrowed, and this narrowing favours the chronicity of trachoma and the development of pannus.

His other methods of treatment are not novel.

Kuhnt's article is an able *resumé* of the various indications for the methods of treatment already known. The treatment of any complication, the treatment of the various stages, and the removal, if possible, from the damp low-lying neighbourhoods which favour the development of trachoma.

Ophthalmia Neonatorum.

F. T. Reiling, M.D, "Report on cases of ophthalmia neonatorum."—*Amer. Journal of Ophthalmology*, October, 1897.

Reiling finds as a result of his investigations that gonococci are not always present in the discharge from the eyes. These cases do far better under mild treatment than the severer methods, which latter are effective in cases where the gonococci are found.

Hence he urges the microscopical examination of the discharge, and dependence on Gram's method of staining.

The gonococci which are present in the cells are not stained by Gram's method, whereas any other diplococci which may be present in the cells are stained.

Ulcers of Cornea.

Uhthoff and Axenfeld. "Bacteriology of suppurative keratitis." *Archiv. f. Ophthalmologie*, XLIV., 1, 1897.

This is a further report of the most interesting study of this subject pursued by these two able investigators.

It has in this article mainly to do with the serpiginous ulcers of the cornea.

They found in every case the Fränkel-Weichselbaum diplococcus, in a few cases slightly mixed with staphylococci and Xero bacilli.

This points to a serpiginous ulcer being a true pneumococcus infection.

Thos. J. Pleasants, M.D. "Hydraulic curetting of certain corneal lesions with sublimate solutions."—*Amer. Journal of Ophthalmology*, October, 1897.

This is really the application of Santarnecchi's treatment, and is so acknowledged by the author. The eye is first cocainized, a solution of corrosive sublimate, of a strength of one in a thousand, is then used in a syringe fitted with a very fine nozzle—about an ounce of the solution is used. The stream is directed against the ulcer or wall of the abscess with increasing force until the necrotic tissue is thoroughly washed away.

The results appear to be very satisfactory.

Syphilis of the Eye.

Henry Juler, F.R.C.S., Eng. "Syphilitic diseases of the eye and its appendages."—*Lancet*, December 11, 1897.

In chancre of the eyelid, the preauricular gland is always swollen, firm and painless, unless roughly handled,—the absence of tenderness being of diagnostic import.

Primary syphilitic sore in this region may be mistaken for rodent ulcer, epithelioma, lupus, chalazion, hordeolum, and tuberculous ulcer of the palpebral conjunctiva.

Chancre of the eyelid is always accompanied by enlargement of the pre-auricular or submaxillary gland or both—whereas rodent ulcer, tertiary syphilitic ulcer, lupus, chalazion, and hordeolum generally may be excluded, since in all of these the preauricular gland seldom, if ever, becomes enlarged.

By the time an epitheliomatous ulcer had caused enlargement of the preauricular gland a hard chancre would have healed spontaneously and the patient be well on in the secondary stage of syphilis.

In suppurating chalazia and hordeola, the preauricular gland enlarges, but is in this case tender, and the skin over it red and œdematous. It is an acute lymphadenitis very different from the chronic induration already mentioned.

By a process of exclusion only one lesion is left, tuberculous ulcer, which is exceedingly rare, here the base of the ulcer is not indurated.

Local Anæsthetics in Eye Surgery.

W. H. Bates, M.D. "Painless eye operations."—*New York Medical Journal*, October 16, 1897.

F. C. Hotz, M.D "Holocain versus cocain."—*Journal of American Medical Association*, November 13, 1897.

E. Bock, M.D. "Injurious effect of holocain."—*Centralblatt für Prakt. Augenheilkunde*, September, 1897.

V. Vamossy. "Anesin."—*Deut. Med. Woch.*, September 2nd, 1897.

G. Vinci. "Eucain B."—*Archiv. für Path. Anat. and Phys.*, Band 149, H 2, 1897.

Bates uses the extract of the suprarenal capsules, together with cocain as Darier, of Paris, has already done.

The suprarenal extract acts as a powerful astringent, reducing congestion of the eye in inflammatory conditions and allowing the cocain to penetrate the tissues more deeply than it otherwise would, as for instance in glaucoma, and in tenotomies of the ocular muscles.

He makes the solution by mixing ten grains of the powdered extract (Armour's) in half a drachm of water and then filters it. The solution must be made fresh just before the operation, and instilled into the eye alternately with the cocain.

To prevent pain and soreness after the operation, he douches the eye with three quarts of a salt solution of one drachm to the pint of water, at a temperature of one hundred and fifteen degrees.

This douche is applied immediately after the operation, before the effects of the cocain have worn off.

Hotz infers as the result of his investigations on holocain, that it is a very rapid and very superficial anæsthetic. Cocain is preferable for the longer and deeper operations. Curiously this is the very opposite to what Wurdemann and Black claim for holocain.

Bock, after seventeen satisfactory results, got a troublesome one in his eighteenth case.

He used a one per cent. solution in the case of an old woman previous to extracting cataract. It caused much pain, dryness and rapid

roughening of the tissues, leading to superficial ulcerations which healed under treatment.

Anesin internally is a hypnotic and locally a non-poisonous anæsthetic. Vamossy made a two per cent. aqueous solution. It is very superficial in action, is harmless, non-toxic.

Vinci finds in Eucain B. a local anæsthetic better than cocain, in that it is less irritant locally, is less poisonous, and has a more marked bactericidal action.

A solution in water of two per cent. is all that is necessary for eye-work.

Optic Neuritis in Intracranial Tumours.

J. M Martin, M.B., etc. "The localizing value of optic neuritis in intracranial tumours."—*The Lancet*, July 10, 1897.

After mentioning the generally accepted statement that optic neuritis is of no value in localizing intracranial tumours, Mr. Martin describes the result of his study and analysis of six hundred cases.

Optic neuritis was constantly present in tumours of the corpora quadrigemina, so that absence of optic neuritis would exclude this area. Next in frequency came the cerebellum and parieto occipital regions 39 per cent. But few cases of optic neuritis occurred in tumours of the corpus callosum, pons, and oblongata.

A comparatively small number of cases showed primary atrophy of the optic nerve in tumours of the pons, medulla, tempero-sphenoidal lobe, motor area, corpus callosum, or corpora quadrigemina.

In cases of monocular optic neuritis, the seat of the lesion is on the same side as the optic neuritis in the proportion of 71 to 29.

Optic neuritis is most frequently absent if the tumour be tuberculous, and is most frequently present if the tumour be gliomatous or cystic.

As to strabismus in cases of intracranial tumour. Martin found in thirty cases that 27 had internal strabismus and it was on the same side as the tumours in 24 cases.

J. W. Stirling.

Dermatology.

UNDER THE CHARGE OF G. GORDON CAMPBELL.

Pemphigus Neonatorum.

L. Emmet Holt, M.D. "A case of pemphigus neonatorum, associated with a general infection by the staphylococcus pyogenes."—*The New York Medical Journal*, February 5th, 1898.

In reporting this case, the author points out that the acute form of pemphigus seen in very young children has nothing in common with the chronic form seen in older children and adults. He believes that the majority, if not indeed all the cases noted, with the exception of those due to hereditary syphilis, are due to some form of general septic infection of which the bullous eruption is only one of the manifestations. That this was so in this particular instance is abundantly evidenced by the following condensed report of the case.

An otherwise healthy infant of nine days, vigorous, and well nourished, was admitted into the Babies' Hospital (New York) on Dec. 9th, 1896, with the shoulders, buttocks, and thighs covered with bullæ of the usual characters, and with a purulent ophthalmia not due to gonococci. The contents of two of the bullæ examined showed pure cultures of staphylococcus pyogenes aureus. The following day symptoms of general infection were present, and from that time on its condition became gradually worse until death on the 22nd. During this time, new bullæ kept on making their appearance, and their evolution was very rapid. The autopsy showed the presence of various pathogenic organisms in the lungs, kidneys, spleen, and liver. The staphylococcus pyogenes aureus and streptococcus longus were both found in all the organs mentioned except in the lungs.

A Case of Ainhum.

James B. Herrick, M.D. "A case of ainhum."—*The Philadelphia Medical Journal*, February 5th, 1898.

Cases of this rare and interesting disease are reported from time to time, but no additional knowledge has been gained of the pathology and etiology of the condition. The present case had reached the stage when the affected toe was practically gangrenous before it came under observation. The chief points worthy of note are summed up by the author as follows: (1) Its occurrence in a negro who had been in

Illinois over thirty years. (2) Its rarity in the northern part of the United States, no previous case being reported north of St. Louis except Dr. Shepherd's case in Montreal in 1887. (3) The location of the constriction, apparently in the lower third of the proximal phalanx and not through an articulation. (4) The absence of clinical evidences of leprosy and of lepra-bacilli in the tissues.

Pityriasis Rubra.

James B. Coleman, M.D. "Note on a case of pityriasis rubra."—*The Dublin Journal of Medical Science*, January, 1898.

The case reported was an example of Hebra's type of the disease in a young man aged twenty years. The disease had been present for only six months, but in that time had involved the entire surface of the body, and desquamation was so active that every morning as much as a pint of scales and powdery detritus was found in his bed. Several of the nails had become separated from their bed by the heaping up of epithelium beneath, and the hair was falling out. The general condition was excellent and the mucous membranes were not affected. An interesting point was the condition of the blood, which showed considerable leucocytosis (37,000 per cubic mm.) a considerable increase being noted in the eosinophiles, as found by Neusser in many skin affections. The sp. gr., hæmoglobin, and red corpuscles were normal.

Coleman refers to the confusion caused by including this condition under lichen ruber, and objects to the term "dermatitis exfoliativa" as well, reserving that term for cases somewhat similar to this, but secondary to other skin diseases—such as psoriasis and eczema. The diagnosis of the case was based upon the absence of thickening, moisture, or any primary lesion ; there had never been papules present at any stage of the disease.

Seborrhœa Nigricans.

John K. Mitchell, M.D. "Seborrhœa nigricans."—*The Philadelphia Medical Journal*, January, 1898.

The patient, a young girl of 24, born in New York of Jewish parents, had been afflicted with a discolouration extending from the eye-brows almost to the alæ of the nose for five years. She was of markedly neurotic temperament and suffered from various manifestations of hysteria. The discolouration became deeper at each menstrual period, especially when the period was more than ordinarily painful. It was increased by extremes of heat and cold, and varied in degree from day to day, and especially after fatigue and mental exertion or

emotions. "On attempting to wipe it off, it gives to the cloth used in wiping a look of smuttiness, as if fine lead-pencil dust were upon it. It can be removed if some force is used and pretty hard scrubbing, but when washed off, is renewed in a few hours. After washing in this way, the skin is found somewhat sensitive, and a little flushed where the colouring has been removed, but this is in part the effect of the rubbing. If she is kept entirely at rest for a few days, making no exertion whatever, the discolouration area lessens and the hue is somewhat less deep." The general condition was good, and treatment directed towards improving the hysteria and locally by means of washing and the application of astringents was of no avail. Careful watching led to the conviction that the pigmentation could not be self-inflicted.

Dr. Mitchell gives in the paper condensed reports of quite a number of published cases, the vast majority of which occurred in young hysterical girls. In the present case the substance removed was examined microscopically by Dr, A. C. Abbott, and was seen to consist of "amorphous masses that resembled only bits of blackened dirt, and the result of bacteriological examination were only those that were usual from normal skins."

Blastomycetic Dermatitis.

T. Gasper Gilchrist, M.R.C.S., and William Stokes, M.D., Baltimore. —*The Journal of Experimental Science*, January, 1898.

This paper is of such interest that we cannot do better than reproduce the summary given by the authors themselves.

"The case reported in this article is one of a somewhat extensive cutaneous disease, which occurred in a man, 33 years of age, who gave the following history: The disease first made its appearance eleven and a-half years ago, at the back of the left ear, as a pimple, which soon became pustular. The process extended forward very slowly and gradually encroached upon and covered almost the entire face, the central portion of which now presents an atrophic condition. Another similar lesion occurred one month after the primary invasion, on the back of the hand, which healed in about four years, after treatment with caustic. A third lesion appeared on the right side of the scrotum (six months after), which increased in size for a year, and then healed spontaneously. A fourth inoculation appeared on the anterior surface of the left thigh just above the internal condyle, and grew for a year, after which it gradually healed spontaneously. A fifth lesion appeared on the back of the neck and also healed spontaneously after growing for a year. The disease when first examined presented many of the features of a lupus vulgaris.

There were no enlarged lymphatic glands, and the patient's health had always been good. The family and personal history revealed no syphilitic or tuberculous taint.

Sections from the cutaneous lesions showed the presence of what appeared to be budding blastomycetes. In many sections also almost typical tubercles were found.

The organisms in the tissue are chiefly spherical unicellular bodies varying from 10 to 20 *m.* in diameter, and consist of a doubly contoured membrane, which encloses a finely granular protoplasm with sometimes a vacuole. Many budding forms in various stages were found; no nucleus could be demonstrated, neither were any mycelium or hyphæ present in the tissues. The parasites were almost always found outside of cells, comparatively few being enclosed in giant cells.

Pure cultures of the organs were obtained from the cutaneous lesion in two places from the pus squeezed out from between the papillomatous variety of the lesion. The organism grew on all ordinary media, and especially well on potatoe and beer-wort agar. The cultures showed both budding forms and a fairly profuse mycelium. The organisms in the cultures were round, ovoid, doubly contoured, refractive bodies, varying in size from about 10 to 20 *m.* in diameter. The mycelium was, on rare occasions, of two varieties, very fine and also coarse with sessile buds and conidia.

Dogs, a horse, a sheep, and guinea-pigs were successfully inoculated, the most striking results being nodules, grossly simulating tumours, in the lungs. Microscopically these nodules were of a chronic inflammatory nature, and contained numerous parasites identical in appearance with those in the patient. In the tissues of none of the animals inoculated was any mycelium found. Since our organism did not ferment sugar and produced in cultures mycelium, it may either belong to the blastomycetes or the oidia, but in conformity with prevailing nomenclature we regard it as a blastomyces.

We shall term the disease which has been produced by this organism *Blastomycetic Dermatitis.* We give the name *Blastomyces dermatitidis* to the parasite which we have isolated and described in this paper.

In closing, we are of the opinion that it would be advisable to examine more carefully all tuberculous lesions of the skin, and especially those of tuberculosis verrucosa cutis, for the presence of blastomycetes. This can be readily and rapidly done by soaking the unstained sections in ordinary liquor potassæ, when the organisms, if present, will stand out as doubly contoured refractive bodies."

G. Gordon Campbell.

Pediatrics.

UNDER THE CHARGE OF A. D. BLACKADER.

Functional Enuresis.

JAMES H. MCKEE, M. D. "Functional Enuresis: Its Nature and Treatment."—*University Medical Magazine*, December, 1897.

McKee, in this paper, endeavours to show that the majority of cases of "functional enuresis" are dependent upon faulty metabolism, and, therefore, that treatment should be directed to correcting the "underlying morbid states" rather than to the symptom itself. In this he is only following in the steps of the more recent writers, though he lays less stress than usual upon the importance of local irritation of the genito-urinary organs as a reflex cause. After a description of the physiology of micturition, the difference between the act in the infant and the adult is pointed out, namely, that up to two or three years of life it is entirely a reflex action, but after this, and in the adult, the lumbar centre is under the control of the cerebral cells. Why the primitive act is supplanted by the adult process so much more easily and so much earlier in some children than in others, and why, when once acquired, the power of controlling it should be lost through disease not directly affecting the nervous system, is not explained except on the ground of general *malnutrition*.

All cases of enuresis are arranged in five groups:

1. Cases exhibiting marked malformation or disease of the genito-urinary tract.

2. Individuals who present developmental or acquired disease of the central nervous system.

3. Cases in which are found marked anatomical evidences of past or present malnutrition.

4. Cases which present nutritive disturbances which are far less apparent, but which a careful study will reveal.

5. Cases where nutritive disturbances need not manifest themselves in palpable form, but in which we are led to conclude that the nutritive balance of the sensitive neuron has been interfered with.

It is with the latter three that the paper deals, and the author includes them all under the *nutritive series*. In group 3, rhachitis, phthisical or scrofulous types, the subjects of tuberculous disease and the subjects of valvular disease of the heart, are included. Under group 4, we have gastro-intestinal disease, any infectious disease, but

especially measles and pertussis, and more rarely gout and lithæmia. The last group (5) embraces the large class of cases in which, either through inherited tendencies or through the weakness of the parents, the child possesses what is commonly called a neurotic constitution. In order to determine this, the existence of neuroses in the family history must be sought for. Or the child itself may be the subject of a neurosis, such as chorea or night terrors. The "reflex factor," which is assigned such a prominent place by some authors, McKee thinks is only of importance as tending to aggravate the neurosis.

From what has been already stated with regard to the etiology, the treatment is naturally directed towards the underlying state as well as to the relief of the symptom itself. "General treatment must be moral, hygienic and medicinal. Uniform kindness should be extended to these little cases, though such kindness need not lack the element of firmness." This is perhaps the case among the middle and better classes of society, but when dealing with the class of out-patients met with in hospital practice, where cleanly habits are often only acquired through the inconvenience resulting from their neglect, one is tempted to advise the use of "the rod" as a preliminary before resorting to other treatment. For the worst cases Mitchell's complete rest cure is indicated. Hours of rest, diet, exercise, bathing, etc., are all worthy of consideration. The old custom of waking up the child in the early hours of the night, in order that he may pass urine voluntarily, is considered of value. Of drugs, cod-liver oil and strychnine are accorded first place. The latter should be given in increasing doses until tolerance is reached. Locally, cold douching of the spinal region and genitalia, and electricity and massage, may be tried. The use of belladonna for its local effect is admitted to be often of inestimable value in controlling the symptom. The passage of a sound and circumcision, in the author's experience, are rarely of any value as therapeutic measures.

Sudden Death in Infants.

James Carmichael, M.D., F.R.C.P. "Intestinal Catarrh—Convulsions—Sudden Death."—*Pediatrics*, December 15, 1897.

In connection with a report of a case of sudden death in an infant aged three months, Dr. Carmichael draws attention to the number of cases in which the cause is undetermined. In the case in question the infant was admitted to hospital on account of "fits." On examination the child was found to be apparently quite healthy. The first convulsion had come on three weeks previously, a second two weeks later, and a third the morning of admission. There was no history

of illness beyond a slight diarrhœa, which improved steadily for ten days after admission, but on the tenth day the temperature suddenly rose to 106, and the following day he died. Post mortem, a healthy condition of the organs was found, with the exception of enlargement of the solitary glands of the small intestine. An examination of the brain was not permitted. The cause of death was considered to be hyperpyrexia, from septic auto-infection. It is unfortunate that the brain could not be examined; but from the absence of any symptoms pointing to a cerebral lesion, the author's conclusion seems justifiable.

Hyperpyrexia *per se* is probably frequently the cause of sudden death in the onset of acute disease, and Carmichael considers that in such cases the cause cannot be determined, as the disease does not get time to declare its nature. Of other causes, he mentions asphyxia either from pulmonary collapse, as in cases of pleuritic effusion, or from laryngismus stridulus, or again from food passing into the air-passages in paresis of the muscles of deglutition; marasmus, by sudden lowering of the temperature; and internal capillary hæmorrhage, either from a mucous surface or from some internal organ.

G. Gordon Campbell.

Pasteurized Milk.

Henry Koplik, New York. "Milk Poisoning Occurring in Infants and Children who Have Been Fed upon Pasteurized Milk."—*Medical Record*, February 19, 1898.

The principal purpose of this paper is to bring to light a certain class of cases which can be distinctly labelled as cases of milk poisoning caused by the administration of pasteurized milk to infants and children.

The author points out that in none of the writings of Pasteur do we find him advocating pasteurization, (60°—65° C., as applied to wine,) as a means for the sterilization of milk, but that he established, that in order to completely sterilize milk, it was necessary to subject the fluid to an additional one-half atmosphere of pressure and a temperature of 110° C. Hence, pasteurization of milk is a process which did not obtain the sanction of the master whose name it bears. Flügge, Lazarus, and others have shown that the pathogenic germs of most of the known diseases would be destroyed by pasteurization, but none of them claim that the process would or could be applied to the destruction of all the bacteria in milk. Flügge distinctly warns the profession against the dangers of pasteurized milk as an article of food for the infant. The bacteria and toxines which are to be considered as

the etiological factors in the causation of gastro-intestinal disorders of infancy are not in any way destroyed or inhibited in growth by this process.

These germs may be divided into:

(*a*) The lactic-acid-forming group.

(*b*) The butyric-acid-forming group.

(*c*) The peptonizing group.

The first group is very active in causing gastro-intestinal disturbance, but may be destroyed by the process of sterilization at 90°-95° C. Russel has obtained from milk fresh from the dairy and pasteurized, at least three separate varieties of acid-forming bacteria. The forms in the second and third groups are not destroyed by any process of sterilization at or below 100° C. Milk with exact percentages may be given, but if it is not kept pure, or moderately so, and free from acids and toxines, we shall see it disagreeing with the patient.

A very definite set of symptoms of "milk poisoning," of an insidious nature in some cases, very marked and troublesome in others, are described. Infants or children who have taken a pasteurized milk will in many cases, as a first suspicious symptom, have frequent movements in the twenty-four hours. Children who have had only one movement, or a constipated movement, will suddenly have five, six or seven loose movements. At first the movements will have a yellow, curdled, lumpy appearance, and a distinct acid odor; or they will have an admixture of green and an intensely disagreeable odor. Such an infant is restless, has colicky pains and a slight rise or no rise of temperature.

In other cases, a baby taking pasteurized milk will to all appearances be in good health and spirits, its appetite will be good, and the alvine discharges will have a normal appearance, three or four a day, when suddenly the baby will have a number of greenish, ill-smelling movements of a very acid character, and then after a dose of oil relapse to a normal state.

In other cases the children will have a number—one, two or three normal movements a day. Following such movements will be a large semi-fluid or soft movement of an extremely acid character and a distinctly penetrating sour odour. After such a movement the patient feels very weak.

In other cases the movements are simply increased in number. They are normal in colour and odour, but more fluid than they should be, and the patient does not seem to increase in weight; there may or may not be a slight rise of temperature towards evening. Lastly,

there are infants who take pasteurized milk well enough for a short time, then suddenly develop a sharp attack of gastro-enteritis, which endangers their existence.

The writer in his clinical work has made several unsuccessful attempts to substitute pasteurized milk for sterilized milk. In his laboratory the milk is delivered by one of the best dairies in the city at a very early hour in the morning. In pasteurizing the milk he first made use of his steam sterilizer, noting the temperature with thermometer, and then, after the milk was kept at 75°-80° C. for forty minutes, it was rapidly cooled and then kept on ice or in ice-water until hard. When the milk was given away the people were supplied with orders for ice with which to keep it cold. With the greatest exercise of care, complaints were made that the milk curdled, or that the infants suffered from one of the forms of insidious sub-acute diarrhœa pictured above.

Eight cases are mentioned in detail to illustrate the deleterious effects of pasteurized milk, and the improvement following the substitution of sterilized milk for it. From these cases we must conclude that there was some irritant substance in the milk, and that bacterial proliferation must be fixed upon as the etiological factor.

If milk is sterilized at 90°-92° C., the first group of bacteria, the bacterium lactis class, is rendered inert, and if unprotected with cold the milk suffers only from the peptonizing group. It is found that without ice the acidity of such milk remains stationary for from three days to three weeks in the warmest weather, and when it does coagulate it does so with an alkaline reaction.

What then is the extent to which our knowledge goes in regard to milk for infant feeding?

Milk should be heated at least to a temperature of 90°, 92° or 100° C., the latter being a preferable temperature, for ten minutes. It should be rapidly cooled and kept cool, below 20° C., until ready for use. In this way the peptonizing bacteria are kept inert.

The argument that the high heat lessens the digestibility of the milk by coagulating the albumens and changing them has not been verified or borne out by actual study on the waste albumens contained in the fæces of infants.

Kenneth Cameron.

Pathology.

UNDER THE CHARGE OF J. G. ADAMI.

Recent Observations upon the so-called "Dust-bodies of the Blood." (Blutstäubchen of H. F. Müller.)

H. F. Müller. "Ueber einen bisher nicht beachteten Formbestandtheil des Blutes."—*Centralblat f. allg. Path. u. Path. Anat.* 1896, No. 13.

Stokes and Wegefarth "The presence in the Blood of free Granules derived from the Leucocytes and their possible Relations to Immunity."—*Johns Hopkins Hosp. Bull. Dec.* 1897, *p.* 246.

Towards the end of 1896 or the beginning of the following year, while studying under Schreiber of Vienna, the present writer had an opportunity of seeing for the first time, a fourth element of the blood, then just attracting some little attention through the work of H. F. Müller, of the Klinik Nothnagel. Bodies had been mentioned by Schiefferdecker, Kossel and Hayem, as occurring in the blood, which were probably the same as those under discussion, and in Montreal in a case of malaria W. F. Hamilton and G. D. Robins had observed the same appearances, which at the time were thought to be possibly spores. While, therefore, not a discovery on Müller's part, nevertheless to him belongs the credit of first attempting to study these bodies in a scientific way and to bring them into prominence.

These particles, for which Müller proposed the name of *Blutstäubchen* or *Haemokonien*, were first noticed by him while studying the blood in a case of Addison's disease. In a native preparation were countless minute, shining, refractile bodies, showing active molecular movement, and which at first sight resembled micrococci or very fine fat droplets. The writer could not regard these as being derived from the hæmatoblasts or as destruction-products of the red corpuscles. The particles varied extremely in number, and at times were difficult to find, but were never absent in normal blood, while they were also present in the few diseased conditions which he investigated. According to the original description they were usually globular, rod-shaped, or in pairs, varying in shade according as they were in or out of focus, and being 1 *m.* in diameter or under. By ringing the preparation with vaseline they could be kept for two or three days. They were not tinged by osmic acid, were not dissolved in acetic acid, and probably

not in ether. From these reactions Müller concluded that they were probably not fat, nor escaped neutrophile granulations, while from his technique he was certain that they had not been imported from without. He also pointed out that they must be carefully distinguished from Kahane's micramœbæ, found in the blood from cancers and cancer patients, which possess cilia and have independent movement. On the whole Müller was inclined to consider them as allied to fat or albumin.

L. Schreiber, who had also studied them, possessed somewhat different views, which he gave to us at that time as follows:

The *Hæmokonien* contain a small amount of hæmoglobin and probably possess automatic movement. As the particles die they resemble very closely hæmatoblasts, and he thought that he had observed cilia. Both Müller and Schreiber agreed that the bodies were especially numerous after the ingestion of food, and that they were neither fat nor neutrophile granulations.

Müller did not appear to have made any attempt to stain them, and Schreiber further assured us that they had not as yet been stained.

Nothing further was published on these interesting appearances until Stokes and Wegefarth brought out their studies on the subject in December last.

These writers amply confirm Müller's original observations, finding the "dust bodies" in the blood of 500 individuals, 100 of them being in good health, and also in many of the lower animals. While they confirm in their own work the few tests that Müller made as to the nature of the particles, they draw some conclusions which are different from those of Müller.

These authors emphasise the fact that the granules vary in size, approximating closely to that of the eosinophilous and neutrophile granulations contained in leucocytes. *No attempt was made to determine their relative frequency in diseased conditions.*

They further observed that when preparations were kept for an hour at 35°C. the granules within the leucocytes were in active motion, resembling the swarming of bees, and the number of free granules in the plasma was perceptibly increased. They did not make out with certainty that the granules left the leucocytes, although they thought that they did so; nor could they convince themselves that there was any destruction of the granules in the leucocytes. In hardened specimens, deep red solutions of eosin stained both large and small granules. They next made a series of observations on the blood of the horse, rabbit, cat, rat and guinea-pig. There they found similar appearances to those in man, only in these cases the size of the

free bodies in each case corresponded to that of the granulations within the leucocytes and varied as they varied.

The authors next pass on to the subject of immunity, and refer to the theory of Metchnikoff and its modifications by Buchner. They also refer briefly to the work of Hahn, Bordet, Schattenfroh, Bail, Dziergowski, Denys and Hanet, the combined work of which observers may be considered as proving that the leucocytes contain a substance which has the power of inhibiting the growth of many bacteria.

Stokes and Wegefarth next pass on to a detailed description of some elaborate experiments with filtered and unfiltered serums from the dog and rabbit, in order to determine their relative power to inhibit bacterial growths. They were enabled to determine that blood deprived of the leucocytes lost its bactericidal property. They also found that by adding new leucocytes to the filtered serum, they could restore its inhibiting action, although the eventual growth of bacteria was not prevented, owing probably to the nutritive material dissolved out from the red cells.

They further added typhoid bacilli to various normal bloods and serums with a view to determine if there was any attraction of the bacilli for the free granules, but without avail. Only with the serum of an immune guinea-pig did they get slight evidence of attraction.

From a consideration of the above mentioned facts, the authors conclude that the free granules are almost certainly derived from the granular leucocytes, and from a consideration of the suggestive work of Hankin, Kanthack and Hardy, they advance the following theory, that

"The bactericidal power of the leucocytes of the blood, and of the serum of man and many animals, is due to the presence of specific granules, especially the eosinophilic and neutrophilic.

"When called upon to resist the action of invading bacteria, the granular leucocytes can give up their granules to the surrounding fluids or tissues."

From a careful study of the very valuable and painstaking work outlined above, we must conclude that while many suggestive facts are brought forward tending strongly to identify the Blutstäubchen of Müller with the acidophile and neutrophile granulations of the leucocytes, yet the train of reasoning does not amount to a mathematical proof.

It is true that in hardened smear-preparations of blood-stained bodies can be seen extra-cellularly situated, which may be either stained Blutstäubchen or granules which have escaped from the leucocytes, but it is evident that in the process of smearing leucocytes are often

destroyed and the granules set free. This possible source of error must be eliminated. Further, we should be able to settle that the polymorphonuclear leucocytes do shoot out their granules, although this has already been shown in the case of the eosinophillous cells of the frog by Kanthack and Hardy.

To prove the first point beyond cavil, we have to satisfy ourselves that the free bodies in the *plasma* possess the same micro-chemic reaction as those within the leucocytes.

To determine the second will need much further study, not only of healthy blood, but that in diseased conditions. And until these missing links are filled in we cannot think that the authors' conclusions reach beyond the point of extreme probability.

When we pass on to discuss the theory of immunity in the light of these new studies, we must, at the outset, bring in the verdict "not proven" with regard to the theory advanced by the authors which is merely a modification of Hankin's, beautiful and simple as it. In fact the theory is too simple, for we have every reason to think, from already observed facts, that since the developmental history of infective micro-organisms within the animal organism varies according to the nature of the germ and its virulence: so the production of immunity would vary also, both quantitatively and qualitatively, in particular cases. That the blood or serum has not the same power for destruction over all germs is well established from the researches of Fodor, Petruschky, Nuttal, Pansini and others.

For instance, human blood or blood serum can destroy typhoid, diphtheria and glanders bacilli, but not anthrax ; and dog's blood or serum can kill typhoid and cholera germs, while it has no effect upon the proteus and pus cocci. Then again certain germs prove pathogenic for man, while harmless for the lower animals and *vice versâ*, and yet free granules are found in the sera of all. Evidently the granules are different in each case, or else other factors must be taken into consideration. Before we should even advance with any degree of confidence the hypothesis that the bactericidal power of the blood is due to free granulations, we should have some information as to the relative proportions of these granules in the different diseases, and whether the power of filtered serums bears any relation to their abundance or otherwise.

As yet we are in the dark on these points. Further, we must have some information as to the causes which will bring about an increase in the numbers of the free granules in the plasma and their relation or otherwise to leucocytosis. That leucocytosis is not everything in the struggle against germs is very clear. Leucocytosis is not always

an evidence of the presence of an infection, as, witness the leucocytosis after ingestion of food, in pregnancy, or the form present in the death agony ; and in certain diseases, notably typhoid, there is not only no leucocytosis but in severe cases indeed a leukopenia, and in miliary tuberculosis, measles, and typhus, and influenza, either no leucocytosis, or merely a trifling one. On the other hand, in the case of leukæmia, carcinoma and sarcoma, where germ influence can probably be excluded, there is marked leucocytosis. Further, we have the important fact that the leucocytosis artificially induced by the injection of protonuclein or pilocarpin has, at least clinically, no destructive or controlling effect upon the germs present in infective diseases, although recent experiments of Durham's seem to indicate that a local induced leucocytosis does have some effect in restraining the advance of infections ; yet this may be due to the mere mechanical effect of the presence of so many white cells. Then again not only is leucocytosis in infective diseases a varying quantity, but its quality also varies. For instance, in typhoid fever, when there is a diminution in the number of leucocytes, it merely effects the polymorphonuclear forms, while there is a relative leucocytosis of lymphocytes, even amounting to 80 per cent. of the white cells present.

The eosinophiles too, which in Hankin's classical experiment in the case of a frog appears to take the initiative, are much diminished in typhoid and sepsis, and in pneumonia do not make their appearance till just at the crisis, when spontaneous cure is beginning. In fact eosinophiles are practically absent during the fastigium of all infective diseases, with the exception of scarlatina, malaria and febrile tetanus. It seems, however, to be a pretty general observation that towards the close of most infective diseases the mononuclear elements prevail. So that the nature of the free granules in the plasma would have to be determined as bearing a definite relation to the predominating type of leucocytes. The important influence of the tissue juices and the lymphatic system in this connection need only be mentioned.

The method by which immunity, then, like most vital processes, is brought about is not so simple as at first sight it might appear, and is probably due to the working of several co-ordinated factors, one or more of which may predominate at any given time. The most common predominant element is certainly leucocytosis, and we must, I think, accept the view first advanced by Hankin, that the elaboration of alexin materials is to be referred to the leucocytes, although his view, that the alexin material is formed by the solution in the plasma of the free eosinophile granualations is by no means generally accepted. The general trend of experimental evidence, however, is in

favour of Hankin's first contention, that the leucocytes are the most important element in the production of immunity. As to the way in which they do this we are still in doubt. For the fact that the anti-toxin of one disease does not protect against the ravages of another seems to argue that there are specific qualities in the method of immunity production in the different diseases, whether this consists in the actual destruction of the bacteria concerned, or the neutralisation of their toxins, or merely the strengthening of the body tissues to a sufficient power of resistance. Buchner, on the contrary, assumes the action of a specific substance derived from the bacteria themselves, and does not believe that the leucocytes destroy or consume the germs.

Enough has been said to at least indicate the manifold nature of the problem before us, and when we have so many hypotheses before us we may be excused from accepting any until more facts are at our disposal. The theory of Stokes and Wegefarth as to the relationship of the escaped granulations to the induction of immunity is certainly a very pretty one, but we think that we must wait until more facts are forthcoming before we accept it unreservedly. Nevertheless the authors are to be congratulated on having brought together so many valuable observations. Their work is of great value and interest, and if not indeed convincing, is very stimulating and suggestive.

A. G. Nicholls.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

PERIODICALS.

(A) The Canadian Practitioner.
(B) The Canadian Medical Review.
(C) The Canadian Journal of Medicine and Surgery.
(D) The Canada Lancet.
(E) Canada Medical Record.
(F) The Dominion Medical Monthly and Ontario Medical Journal.
(G) The Maritime Medical News.
(H) L'Union Médicale du Canada.
(I) La Clinique.
(J) La Revue Médicale.
(K) The Kingston Medical Quarterly.
(L) British Medical Journal.
(M) Journal of Cutaneous and Genito-Urinary Diseases.

Abdominal Surgery—Experience of two hundred and forty-eight cases of. A. L. Smith, Montreal, (A) Dec. 1897, p. 884, and (E) Dec. 1897, p. 789.

Action of certain drugs on the gastric secretions. Andrew Halliday, Shubenacadie, N.S., (L) Dec. 25th, 1897, p. 1716.

Address, Introductory—to the nurses in training at the Western Hospital. Price-Brown, Toronto, (B) Nov. 1897, p. 145.

Address, President's,—to the Toronto Pathological Society. H. B. Anderson, Toronto, (A) Nov. 1897, p. 781.

Address, President's—to the Toronto Clinical Society. A. A. Macdonald, Toronto, (B) Dec. 1897, p. 179.

Adenoid vegetations at the vault of the pharynx. E. A. Kirkpatrick, Halifax, N.S., (G) Dec. 1897, p. 405.

Des affections du sein pendant la période puerpérale. E. A. René de Cotret, Montreal, (H) Jan. 1898, p. 28.

Anæsthetics in midwifery. J. J. Cameron, Antigonish, N.S., (G) Jan. 1898, p. 7.

Application of the principle of osmosis to the treatment of toxæmia. Walter McKeown, Toronto. (A) Jan. 1898, p. 1.

A visit to the Willard Parker Hospital. M. A. B. Smith, Halifax, N.S., (G) Jan. 1898, p. 11.

Bacillus aërogenes capsulatus—Notes on some cases of infection. Albert G. Nicholls, Montreal, (L) Dec. 25th, 1897, p. 1844.

Baldness and its relation to seborrhœa—The pathology of. W. Pepler, Toronto, (A) Dec. 1897, p. 871.

Behring's serum in diseases not due to the Klebs-Loeffler bacillus—A preliminary report on the action of. H. A. McCallum, London, Ont., (L) Dec. 25th, 1897, p. 1709.

Carbon monoxide—New, test for. A. P. Reid, Halifax, N.S., (G) Dec. 1897, p. 412.

Carcinoma of the stomach with sub-cutaneous metastases. H. J. Hamilton, Toronto, (A) Jan. 1898, p. 10.

Contusion suivie d'une arthrite suppurée et d'une ankylose. E. Pâquet, St. Aubert L'Islet (J) No. 20, p 153.

Contracted foot. B. E. McKenzie and H. P. H. Galloway, Toronto, (D) Jan. 1898, p. 213.

Coprinacetoxine—On the muscarine-like physiological action of. F. Morley Fry, Montreal, (L) Dec. 25th, 1897, p. 1713.

Cortical cerebral localisation: with special reference to rodents and birds. Wesley Mills, Montreal, (L) Nov. 20th, 1897, p. 1485.

Dacryocystitis—A second contribution to the etiology of. A. A. Foucher, Montreal. (L) Jan. 8th, 1898, p. 84.

Dilatation aiguë de l'estomac—Un cas de. Albert Jobin, St. Roch, Que., (J) No. 23. p. 177.

De la diphtérie et son traitement—Statistiques. J. E. Laberge, Montreal, (J) No. 16, p. 121.

Diphtheria antitoxin—On the preparation of. Alfred T. Bazin, Montreal, (L) Dec. 11th, 1897, p. 1711.

Diphtérie sérothérapie, tubage et trachéotomie—Deux ans d'expérience personnelle—Résultats obtenus en practique privée dans 70 cas de. J. L. Archambault, Cohoes, N.Y., (H) Dec. 1897, and Jan. 1898, p. 705.

Eclampsia—Treatment. W. J. Wilson, Toronto, (C) Dec. 1897, p. 276.

Effects of age on the vascular system. Stewart Skinner, St. John, N.B., (G) Nov. 1897, p. 370.

Effects of gravity on the circulation. R. D. Rudolf, Toronto, (A) Nov. 1897, p. 789.

Endometritis, chronic—Its causes and treatment. J. W. S. McCullough, Alliston, Ont. (D) Dec. 1897, p. 159.

Elephantiasis. J. M. Rohler, British Guiana, (E) Nov. 1897, p. 734.

L'état hygiénique de nos écoles rurales. J.C. Paradis, Montmagny, Que., (J) No. 19., p. 145

Feigned eruptions -Some cases of. Francis J. Shepherd, Montreal, (M) Dec. 1897, p. 543.

Formaldehyde—Notes on household disinfection. Wyatt Johnston, Montreal, (L) Dec. 25th 1897, p. 1843.

Glandular therapeutics. W. H. Merritt, St. Catharines, Ont., (F) Jan. 1898, p. 1.

Hydrophobia versus common sense. G. A. Stockwell, Detroit, (F) Dec. 1897, p. 885.

l'Hypertrophie des amygdales et de son traitement. L. N. J. Fiset, Quebec, (J) No. 21, 22, p. 161.

l'Hystérectomie vaginale avec un rapport de quelques cas—Les indications pour. A. Lapthorn Smith, Montreal, (J) No. 18, p. 137.

Laryngitis—Chronic Arytenoid. Price Brown, Toronto (L) Nov. 27th, 1897, p. 1556.

Massage. T. J. R. Cook, Toronto, (A) Dec. 1897, p. 887.

Massage as an occupation for the blind. A. G. Bennett, Buffalo, N.Y., (D) Nov. 1897, p. 105.

Mechanical obstruction in the female pelvis—Cases of. T. K. Holmes, Chatham, Ont., (A) Jan. 1898, p. 13.

Mental disease—A political aspect of. Ezra H. Stafford, Toronto, (C) Jan. 1898, p. 12.

Methods and results in the Burnside Lying-in Hospital, connected with the Toronto General Hospital, Toronto. Adam H. Wright, Toronto, (B) Nov. 1897, p. 155.

Obstruction of the bowels—The surgical treatment of. H. C. Wyman, Detroit, (F) Nov. 1887, p. 841.

Odor as a symptom of disease. J. H. McCassy, Dayton, Ohio, (B) Dec. 1897, p. 183.

Orthopedic aspect of diseases of the nervous system. B. E. McKenzie and H. P. H. Galloway, Toronto, No. 1, Infantile paralysis, (C) Dec. 1897. No. 2, Spastic Paralysis, etc., (C) Jan. 1898, p. 1.

Persistent foramen ovale. R. D. Rudolf, Toronto, (A) Dec. 1897, p. 879.

Phénomènes psychiques et la médecine—Charles Verge, Quebec, (J) No. 26, p. 201.

Pneumonia with recurrent effusion into both pleural cavities, and pericarditis with recurrent effusions—A case of bi-lateral. Geo. E. Drew, New Westminster, B.C., (G) Nov. 1897, p. 383.

Pregnancy—Some considerations in the management of. E. E. Harvey, Norwich, Ont., (A) Dec. 1897, p. 864.

Pyoktanin-blue in cancer. H. H. Mackay, New Glasgow, N.S., (G) Dec. 1897, p. 414.

Relation of chronic endometritis to early rupture of the membranes in labor. M. Currie, Picton, Ont., (A) Dec. 1897, p. 877.

Septicæmia lymphatica—A severe case of. Alex. Forin, Rossland, B.C., (D) Nov. 1897, p. 110.

Surgery and facts. James F. W. Ross, Toronto, (F) Nov. 1897, p. 229.

Surgical cases—Some interesting. James Newell, Waterford, Ont., (F) Nov. p. 1897, 845.

Testicle—Brief notes on inflammatory, cystic, and degenerative diseases of the. Thomas H. Manley, New York, (C) Jan. 1898, p. 17.

Tonsillitis—The relatives of. J. R. McIntosh, St. John, N.B., (G) Jan. 1898, p. 1.

Tuberculose—Histologie et traitement climatérique de la. H. A. Larue, Quebec, (J) No. 19, p. 145.

Tuberculosis—Pulmonary. W. H. Hattie, Halifax, N.S., (G) Nov. 1897, p. 373.

Tuberculosis—The place of the state in dealing with. P. H. Bryce, Toronto, (A) Jan. 1898, p. 16.

Tumours of the rectum. Geo. Bingham, Toronto, (A) Dec. 1897, p. 859.

Virulence et immunité. A. Rousseau, Quebec, (J) No. 24, 25, p. 185.

Kenneth Cameron.

Reviews and Notices of Books.

A Clinical Text-Book of Surgical Diagnosis and Treatment for Practitioners and Students of Surgery and Medicine. By J. W. Macdonald, M.D., Graduate in Medicine of the University of Edinburgh; Licentiate of the Royal College of Surgeons, Edinburgh; Professor of the Practice of Surgery and of Clinical Surgery in Hamline University, Minneapolis, etc. With 328 illustrations. Philadelphia: W. B. Saunders, 925 Walnut street. 1898.

Dr. Macdonald in the present volume sets out to do for surgical diagnosis what DaCosta, Musser, Vierordt and others have done for medical diagnosis. When confronted with a surgical case, the first question naturally is, "What is the disease or injury?" The second question is, "What is the proper treatment?"

To answer these questions correctly, an intimate knowledge of the principles, pathology and bacteriology of surgical diseases and injuries is necessary. Indeed, Dr. Macdonald partly supplies this knowledge in addition to the subjects indicated on the title page, thus enhancing the value of the book.

The diagnosis is at times treated more briefly than might have been expected in a book especially devoted to diagnosis and treatment. More space, for example, might have been devoted to the signs of commencing malignant disease in different organs. It is now decided that cancer is at first a local disease, and the indications are to remove it entirely, to eradicate every vestige of it. To do this one can hardly wait until lymphatic glands are enlarged and cachexia is evident.

The treatment is, as a rule, up to date. In some parts one might well wish for fuller, more detailed descriptions of operations. In cancer of the breast, for instance, Halstead's operation is the only one given. It is given well, however, and fully illustrated, but a description of Kocher's method of extirpating the breast in malignant disease, which possesses some advantages over Halstead's, would have been an advantage.

In the operation for removal of the tongue in cancerous disease of that organ, Kocher's operation is well described and illustrated, while Whitehead's operation, so commonly performed at present, is disposed of in ten lines. Fractures and dislocations, which form so large a part of acute surgery, are treated in a very satisfactory manner, both as regards treatment and diagnosis. Dr. Macdonald very properly emphasizes the advisability of always breaking up the impaction in Colles' fracture of the radius, and the relative unimportance of splints.

Dr. Macdonald has done his work well, and the publishers have issued a handsome volume. It will be a ready reference book.

Orthopedic Surgery. By James E. Moore, M.D., Professor of Orthopedics and of Clinical Surgery in the College of Medicine of the University of Minnesota; Fellow of the American Surgical Association; Member of the American Orthopedic Association; Surgeon to St. Barnabe's Hospital; Consulting Surgeon to the Northwestern Hospital for Women and Children, to St. Mary's Hospital, and to the City Hospital, Minneapolis, Minn. With 177 illustrations. Philadelphia; W. B. Saunders, 925 Walnut street. 1897.

The author and publisher are to be congratulated upon the neatness of this book. The illustrations are beautifully clear and accomplish their object to a very great degree. The text is concise, to the point, and very readable.

The chapter on lateral curvatures is well illustrated, and the directions for appropriate gymnastic exercises so fully given, that no one need err. The difference clinically between a rickety spine and angular curvatures are pointed out.

Very full descriptions are given of the methods and apparatus in use for the treatment of Pott's disease of the spine and hip-joint disease.

The perfect rest secured by the maintenance of the recumbent position in the progressive stages of the disease is emphasized.

The surgical treatment of tubercular abscess is dealt with fully and in a properly conservative manner, while the objections to radicalism and ultra conservatism are set forth in unmistakable terms. The same may be said of the handling of the question of excision of tubercular joints.

The book is commendable, and we believe will be highly appreciated by all those who are studying and practising orthopedic surgery.

Diseases of Women. By A. H. N. Lewers, M.D., Lond. Fifth edition, Cr. 8, pp. 526. Published by H. K. Lewis, Gower Street, London.

This work has now run through four editions, and there has been a demand for another, which is evidence of the popularity of the book. The new edition contains some eighty-seven pages more than the former one, thus making an important and useful addition, containing as they do articles upon sterilization of the hands, instruments, hysteropexy, abdominal hysterectomy for fibroids, etc., subjects which were either completely ignored or merely touched upon in previous editions.

The author considers the operation of shortening the round ligaments too dangerous to recommend to patients, but he neither describes the operation nor states what the dangers are. He is a great admirer of pessaries, saying that "no plastic operation will *cure* cases of procidentia. . . . . If, however, she wears a ring, a permanent condition of comfort is obtained." He makes no mention of the fact that you undoubtedly can cure the vast majority of cases of procidentia by a plastic vaginal operation plus either ventro-fixation or Alexander's operation.

One of the most noteworthy articles in the book is that upon "Deciduoma Malignum," which the author considers to be a primary sarcoma of the uterus, which may arise quite independently of pregnancy.

Although the book cannot be recommended as one of great utility to the student, yet it is one which is written in excellent English and an attractive style. F. L.

Mediterranean, Malta, or Undulant Fever. By M. Louis Hughes, Surgeon-Captain, Army Medical Service. Macmillan & Co., Limited, London and New York, 1897, pp. 232.

This is probably the most complete work on the subject that has ever appeared. The author, on arrival in Malta for six years' service, in 1890, found that this fever, though constituting such a large proportion of all the diseases met with in the island, was so little understood that it was confounded with enteric fever on the one hand and malarial fever on the other. He undertook, therefore, to clear up the confusion prevailing with regard to it, and by the careful observation and pathological and bacteriological investigation has given us a very complete account of the affection, and confirmed the observations of Surgeon-Major Bruce in 1886 concerning the presence of a specific micro-organism. The book is well written throughout, and the author does not claim too much for his work, which, he explains, is necessarily incomplete in some respects, owing to lack of time and money. It is proposed, with seeming good cause, to change the name of the disease from Malta or Mediterranean fever to undulant fever. The two former names have been used indiscriminately for several diseases, while the latter has the merit of being descriptive—the course of the temperature being marked by a series of waves—as well as original. G. G. C.

Transactions of the American Ophthalmological Society. Thirty-third Annual Meeting, Washington, D.C., 1897. Hartford: Published by the Society, 1897.

The transactions of this Society at their annual meeting, in 1897, forms a volume of rather larger dimensions than usual.

The contents comprise material of rather more novel character than usual, very interesting and due to research.

In previous years it has been too much of the nature of a series of case reports.

Case reports are always interesting and valuable, but one looks also for something betokening research and study.

Dr. G. M. Gould communicates a very interesting paper on the refraction changes following increase or decrease of body weight.

The increase of the general body weight being due mainly to adipose tissue, there is simultaneously an increase of the orbital fat, and *vice versa* in a condition of loss of bodily weight.

The increase of orbital fat by its pressure on the posterior pole of the

eye, produces an antero-posterior shortening of the globe with a corresponding increase of hypermetropia, or diminution of myopia, the converse also holds. Dr. Gould illustrated his paper by several cases.

The use of the Röntgen rays in localizing foreign bodies in the orbit is dwelt on by Dr. Oliver and Dr. W. Thomson.

Dr. Richey urges the use of taxis in increased intra-ocular tension, holding that the tension is due to deficient outflow through the venæ vorticosæ, favoured by their oblique course through the coats of the eye, which if untreated may result in thrombosis. He urges this taxis proceeding in chronic cases.

Dr. G. E. DeSchweinitz reports on a case of Tobacco Amblyopia, with sections of the nerve.

Dr. Spalding has a paper on optic atrophy following sexual excesses in four cases of boys of sixteen years of age.

Pages 103 to 105 are missing, a rather unpardonable offence, especially in society proceedings.

As is always the case there is much material of interest in these proceedings. J. W. S.

Mastoid Abscesses and their Treatment. By A. Broca, M.D., and F. Lubet-Barbon, M. D. Translated and edited from the French by Henry J. Curtis, M.D., F.R.C.S., Eng., with eleven coloured illustrations. London: H. K. Lewis, 136 Gower Street, W.C., 1897.

This is really a valuable work and well worth the translation, which by the way is remarkably well done.

The book is a series of case reports with a running commentary on them, and useful deductions therefrom. This seems the most valuable way of teaching a subject and impressing it on the mind.

It is almost impossible in a case of this kind to particularize any special part of the work.

There is perhaps a little too much elaboration in the classification.

The coloured plates are a little crude but very useful.

For an extensive, detailed account of the subject, the work could hardly be surpassed, and can be strongly recommended.

H. K. Lewis publishes the book in his usual first rate style. J. W. S.

Outlines of Rural Hygiene. By Harvey B. Bashore, M.D., Inspector for the State Board of Health of Pennsylvania. T. A. Davis, Phila., 1897, pp. 89.

This book shows on every page that the author is evidently both a practical and scientific sanitarian—two qualifications which by no means always go together. The addition of a well-written chapter regarding the significance of the normal chlorine in the water of a district gives it a special value. J.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, January 7th, 1898.

ROBERT CRAIK, M.D., PRESIDENT, IN THE CHAIR.

Dr. E. W. Archibald was elected an ordinary member.

The Treatmant of Fractures by the Ambulatory Method.

Dr. G. E. ARMSTRONG showed a man whom he was treating for fracture of the tibia by the ambulatory method, and gave the following description of it :

The idea is to apply a fixation apparatus that will enable the patient to use the broken leg in progression. To allow the patient to get out of bed and to go about with the aid of crutches is the idea in the ambulatory treatment of fractures. To attain this object any fixation splint may be used, but plaster of Paris has been chiefly employed, either alone or together with other splints. I have tried to carry out the idea in eight or ten cases recently admitted to the wards of the Montreal General Hospital, and I find that in properly selected cases this method possesses decided advantages.

In this man, the fracture is of both bones about the middle of the leg, and the fracture of the tibia is very oblique. He limps along as you see, but that is about all the inconvenience he has. One great advantage is that the patient can get out of bed. The ability to move about is a great gain. A business man may go down to his office for an hour or two each day and look after his affairs. The advantage is still greater in the case of old people with fracture of the neck of the femur. By avoiding the confinement to bed pneumonia is prevented. I find this method adapted to the treatment of Pott's fracture and fractures of the fibula.

The other advantages claimed for the ambulatory method are lessening of the muscular atrophy and the stiffening of joints, more rapid repair, and the avoidance of delirium tremens.

Meniere's Disease.

Dr. F. G. FINLEY exhibited a case of Menière's disease.

The patient, aged 44, baggageman, was admitted to the Montreal General Hospital on Dec. 29, 1897, complaining of attacks of vertigo with vomiting.

About four years ago, whilst apparently in perfect health, he began to have attacks of giddiness on rising in the morning, staggering always towards the left side. The attacks lasted from 45 to 60 minutes, and came on every two weeks, and latterly have become rather more frequent. About the same time he noticed noises in the ears, compared to rumbling or whistling, and these sounds have continued constantly since.

For the past year there has been diarrhœa, a loose stool being passed after each meal, but not accompanied by pain. Vomiting with the attacks of vertigo set in two months ago.

For the past six months deafness has been noticed.

On the day before admission, whilst at work, he suddenly fell down and lost consciousness for half an hour, hurting his shoulder, but not biting his tongue or passing urine.

His health previous to the onset of the attacks of vertigo was always good, with the exception of an attack of pleurisy 18 years ago. A brother is stated to have died of this disease, but there is nothing further pointing to tuberculosis in the family history.

Examination.—The patient is a rather spare man, with small muscles. The temperature is normal (and continued so during his stay in hospital) and the pulse 76.

The right lung presented marked dulness at the apex posteriorly to the 5th spine, with slight blowing breathing, and fine crackling *râles*. There was no cough or expectoration nor had there ever been. The other organs and urine were normal. The bowels moved once or twice daily after his admission, the stools being rather loose.

The ears were examined by Dr. Birkett, who reported R ear 1-40, L ear c-40, membranæ tympanorum, indurated and thickened, no reflex. Bone conduction very defective, especially for the higher notes.

During his stay in hospital he was treated with pilocarpin hypodermically, with a view of influencing the chronic catarrhal condition in the ears. Although there were no attacks of vertigo in the hospital, this is rather to be attributed to rest and quiet than to treatment, as the attacks recurred as frequently as ever after his exit.

The case is evidently a typical one of Menière's disease, the four cardinal symptoms—vertigo with vomiting, noises in the ears, and defective bone conduction being present.

The chronic catarrhal otitis media points to a similar condition of the labyrinths.

The importance of examining the bone conduction with tuning forks of different pitch is very well exemplified in this case. With a

low pitched note, no departure from the normal could be made out, but with a high note the difference was very obvious.

The diagnosis of aural vertigo is usually easy, although the condition is frequently overlooked and attributed to biliousness. According to Gower 90 per cent. of cases of vertigo are due to labyrinthial disease, and the importance of "*Vertigo e Stomaco Læso*," doubtless owing to the teaching of Trousseau, has been much over-estimated. Gastric disturbance undoubtedly increases the frequency and often precipitates an attack, but inquiry into the aural symptoms, and particularly careful testing of bone conduction, almost always shows that the origin of the disease is in the ear.

The chronic diarrhœa, with evidence of disease in the apex of the lung, was attributed to tuberculosis.

Stated Meeting, January 21st, 1898.

ROBERT CRAIK, M.D., PRESIDENT, IN THE CHAIR.

Irritative Trismus.

Dr. J. ALEX. HUTCHISON read the report of this case and presented the patient before the society. (See page 132 of the February number.)

Appendicitis in an Infant.

Dr. J. ALEX. HUTCHISON read the report of this case. (See page 133 of the February number.)

Stated Meeting, February 4th, 1898.

ROBERT CRAIK. M.D., PRESIDENT, IN THE CHAIR.

Osteomyelitis of the Tibiæ and Femur.

Dr. BELL presented two tibiæ and the lower half of a femur, illustrating the late effects of osteomyelitis, and gave brief reports of the cases as follows :

CASE I.—A. W., a strongly built man, æt. 44, was attacked with acute osteomyelitis in the lower third of the left tibia, at the age of 12 years. He recovered after a long severe illness, with a sinus persisting. Several years later another sinus appeared higher up the leg. These sinuses kept healing over and breaking out at intervals, and on one occasion a sequestrum about three inches long escaped from the uppermost sinus. Eight years ago the bone was operated upon. He was laid up for eight or nine months and it was a year and a half before he could go about as usual,—the sinus still persisting. Four years ago he fell and broke the bone about the middle. He was laid

up four or five months and the bone united, but the sinus still persisted. Three years ago he broke the bone again at a point a little higher up than the first fracture. He was laid up four or five months and union took place. He was able to get about and work on his farm until the 30th of December, 1897, when he fell and broke the bone again on a still higher level than the previous fracture. Two days later he came to the Royal Victoria Hospital. There was a clean transverse fracture across the tibia, at the junction of the upper and middle third, but no displacement. The anterior subcutaneous portion of the tibia, in the middle third, was exposed. It was free from periostium, rough and irregular. A sinus led down to the bone from a point about three inches below the tuberosity of the tibia, on the inner and posterior surface, and another about eight inches lower down. On the 6th of January, 1898, the leg was amputated through the knee joint, (lateral flaps), and the patient made an uninterrupted recovery, with an excellent stump.

The tibia was dissected out and sawn down the centre throughout its whole length. The bone was greatly sclerosed, the medullary cavity obstructed, and it showed three or four old abscess cavities in the cancellous tissue.

Case II.—W. B. McG., a pale, neurasthenic man, æt. 48, was seized suddenly one evening, after a hard day's skating, when 14 years of age (1863), with acute osteomyelitis in the upper part of the left tibia. He was very ill for several months, and recovered with a sinus. The usual history of sinuses—healing over and breaking out again—followed, but he was laid up with acute suppurative conditions about the leg in 1870, 1881, 1885, and November, 1886. Since the last attack he has suffered a great deal of pain in the tibia and has not been able to get about without a crutch, and he had an attack of synovitis of the knee joint, which, however, left the joint functions unimpaired. On January 1st, 1897, there was general thickening of the bone with tender spots, just below the tuberosity on the inner side and about the middle third and the upper part of the lower third. There were no sinuses. Trephining was recommended, but the patient declined to have any operation except amputation. This was done, through the condyles, on the 21st of January, and the patient made an excellent recovery.

Vertical section of the bone showed numerous abscess cavities throughout its whole length. The medullary cavity was obliterated and the whole bone very dense. It would have been quite impossible to have located and enumerated the many abscess cavities found.

Case III.—A pale, emaciated boy, æt. 19, was seized with osteomye-

litis in the lower portion of the femur in August, 1894. A long illness of many months followed, during which the leg became flexed to an angle of 45°. Sinuses persisted and operations for the removal of sequestra were performed in September, 1896, September, 1897, and January 13th, 1898. At this latter operation it was decided to recommend amputation. On the 28th of January, 1898, a circular amputation was performed at the junction of the middle and upper portions of the thigh. The patient made an excellent recovery.

Section of the bone (in its length), showed obliteration of the medullary cavity, sclerosis and deep irregular cavities in the lower end of the bone, from which sequestra had been removed.

In presenting these cases Dr. Bell expressed the opinion that surgeons, in their laudable desire to save limbs, probably often erred in doing repeated, serious operations upon hopelessly diseased bones instead of amputating. He thought every one would admit that these cases were hopelessly diseased and that the patients who recovered in three or four weeks, and would be getting about on modern artificial limbs in three or four months, would appreciate the more radical treatment.

Dr. G. E. Armstrong, said:

Hospital surgeons are more frequently called upon to treat the sequelæ of osteomyelitis, than the disease itself. With the exception of the acute cases arising during the convalescence of typhoid patients transferred from the medical wards, hospital surgeons rarely see these cases during the early stages. This is unfortunate and hard to account for. The pathology and bacteriology of osteomyelitis are now well understood. The diagnosis and treatment during the early course of the disease are not difficult, but the closure of the large bone cavities found in old cases of long standing is extremely unsatisfactory. I have seldom been able to close these cavities with blood clot as advised by Schede. Nor does Senn's method of closing them with decalcified bone chips yield much better results. I believe that these extreme cases, necessitating amputation, would not occur if osteomyelitis was recognized early and treated properly in the early stages. I have tried twice unsuccessfully to close the cavities by filling them with sterilized plaster of Paris. The insuperable difficulty is to render these large irregularly shaped spaces sterile.

Dr. Bell, in reply, said that he agreed with Dr. Armstrong about the way in which cases were overlooked when acute, though this was not so much the case now as it was many years ago, when the cases of which the report had been given were in the acute stage. One of these occurred 35 and another 32 years ago. With reference to the

closing of large cavities, he had used both chips and blood clot with not very great success. Healing by blood clot he considered the ideal method. Irregular cavities could not be rendered aseptic.

Vaginal Hysterectomy upon an Old Woman.

Dr. F. A. LOCKHART read the following report :

The patient, from whom the accompanying specimen was removed, is a Mrs. F., aged 75 years. She was first admitted to the gynæcological ward of the General Hospital on November 5th, 1897. Her complaint was " falling of the womb," which she said had only existed for eight days, but this is probably incorrect, as her statements are very unreliable, and the ulcerated condition of the vaginal mucous membrane pointed to a duration of at least several weeks. She first menstruated at 14 and was regular every month until she was 21 years old, when the flow ceased and did not return. She had pain in the right iliac region for seven or eight days each month at the time when the flow should have appeared.

She had one full-time child, who, she says, is 33 years old, but I think that either this statement or the previous one that her menses finally disappeared when she was twenty-one years of age is wrong, as she would be very unlikely to have a child after the cessation of menstruation, whereas an extremely probable cause of that cessation would be superinvolution of the uterus.

The patient's general condition was fairly good, but all of the superficial arteries were very atheromatous, which made one rather anxious to avoid operation.

Local examination of the genitals revealed a large mass, consisting of the uterus, part of the bladder and rectum, and the vagina, protruding from the vulva, the cavity of the vagina being reduced to about half an inch in depth.

The mucous membrane was eroded all around the protruding mass for fully two inches from the external os uteri, and was also greatly hypertrophied and thickened. There was no enlargement of the inguinal glands.

The uterus was carefully washed with creolin, and, after dusting it with a powder consisting of oxides of bismuth and zinc and boracic acid, was easily returned inside of the vulva, and a large boroglycerine tampon inserted to retain it in position. The above proceeding was repeated daily for the next ten days, the patient being kept in bed, after which the vagina was simply douched with creolin twice daily until the patient left the ward on Nov, 29th, by which time the uterus had returned to its normal condition and the ulceration had healed except at the margin of the os uteri.

The patient re-entered hospital on Dec. 11th, the uterus having remained in position for ten days only after her leaving the ward. Four days later, the uterus and appendages were removed *per vaginam*, ligatures being used. The only points about the operation worthy of note were the extreme difficulty at first on account of the thickened mucous membrane obscuring the usual landmarks, and the presence of a unilocular cyst of the right ovary, the size of a large orange. (This occupied the site of the periodic pain from which the patient suffered.) After the uterus had been completely separated on the left side, the cyst bulged into the wound and was punctured and removed without much difficulty.

On account of the atheromatous condition of the vessels, chloroform was used instead of ether.

The patient's convalescence was uneventful, the pulse only twice going up to 90 and the temperature never reaching 100° F. She sat up in a chair on the 18th day and left the hospital on the 30th.

The pathologist reported the presence of very early cancer of the cervix.

I am greatly indebted to the care and watchfulness of Dr. Chas. Gurd, who was house gynæcologist at the time, and to the nurses, as without their active co-operation the result might have been different.

Dr. Lapthorn Smith thought removal of the uterus was the proper procedure in cases of procidentia such as this, because the cervix was most often the seat of beginning cancer. It was so in three of his cases. When the patient would not consent to this, ventro-fixation was satisfactory, if the uterus was not too large. Where the uterus was large and heavy Alexander's operation was preferable, because there was too much pulling on the abdominal wall after ventro-fixation. In either case the cervix should be amputated and an operation performed for narrowing the anterior and posterior vaginal wall.

With regard to whether one should use ligatures or clamps in vaginal hysterectomy, he thought the ligatures gave the best results, although they rendered the operation much longer and more anxious. In one case he had sewed the two broad ligaments together and closed up the opening in the vaginal roof with cat-gut and thus greatly strengthened the floor of the pelvis. This patient went to work as a charwoman a week later against his orders.

Dr. J. C. Webster asked if Dr. Lockhart had performed the operation for cancer or for the relief of the procidentia. On the operator replying that it was for suspected cancer, Dr. Webster pointed out

that it was important to make the distinction, as this operation had been repeatedly tried for procidentia uteri and had been justly condemned by such men as Pozzi, Leopold, and Müller among others. The reason for this was a very simple one. Procidentia uteri was simply a hernia of the pelvic floor, and removal of the uterus not only did no good, but actually did harm by taking away part of the support. He had never seen a case that could not be helped by amputation of the cervix, anterior and posterior colporrhaphy, perineal repair, and, in addition, in many cases, ventro-fixation of the uterus.

Total extirpation could only be regarded as justifiable when the removal of some condition associated with the procidentia was necessary, *e. g.*, carcinoma or myoma uteri.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXVII. MARCH, 1898. No. 3.

THE COLLEGE OF PHYSICIANS AND SURGEONS OF QUEBEC.

Upon another page we have printed a circular addressed to the English members of the profession of this Province by a committee of physicians, which is paralleled by a circular in French, addressed to our French confrères. From this it would seem, that at last the agitation against the College of Physicians, as it is at present constituted and conducted, has taken an active form. For ourselves, we cannot but agree with the signers of this circular, and we cordially hope that the result of this agitation will be to bring about the election, next July, of men who will put an end to the existing condition of affairs. We have no hesitation in saying, that that condition is eminently, not to say notoriously, unsatisfactory.

There is, we know, a disposition on the part of the English speaking members of our profession, to be callous with regard to the College, and to "let sleeping dogs lie." We are in so small minority, that what we do appears to be of little influence; in short, the general disposition has been to let the French members run the College their own way, and only to think of agitating when the French representatives of the College appear by their legislation to be encroaching upon our prerogatives. This attitude of mind is inexcusable. If the French majority in this Province are working towards better things, the right spirit on our part is to support them cordially, and, in the present instance, to argue upon a lower plane, it is to our advantage to support the reform movements, for such support cannot weaken the English representation in the College; it may possibly improve it. It is, for example, utterly indefensible, that under existing conditions, the large body of English speaking physicians in this city, has no direct representation upon the Governing Board. To put the con-

dition of affairs plainly, as matters at present stand, while nominally the mass of members of the Board of Governors of the College is elected by the profession at large, the truth is that the profession absolutely plays no part in the election. With few exceptions, including the university representatives, the members are elected upon one ticket and under the present regulations whereby members of the profession in this Province can vote by proxy, it is possible for any one who is politically minded, to collect together such a number of undated and indefinite proxies simply signed by the names of practitioners in the Province, that at the election he can produce all these proxies and completely swamp the vote of those present. Thus it is possible for one man who has been sufficiently energetic in the matter of collecting proxies, and who has sufficient influence, direct or indirect, to do this work, to elect a working majority upon the Board of the College, a majority completely subservient to him. We grant freely that under certain conditions this power might be utilised to the advantage of the profession in general; indeed we know from history that autocratic rule has been at times fraught with great advantage, but we know also that it can be fraught with most serious evils. Without beating about the bush, we may say that the autocrat in this case is the Registrar of the College, Dr. Beausoleil, and we would ask what has Dr. Beausoleil done and what is his position in the profession of this Province, that he should by his influence over the members of the College, control our medical legislation? No one will deny that influence. Indeed it was as a consequence of it that recently, in order to bring Quebec into line and to bring about reciprocal legislation between licensing boards of the various provinces, he was appointed President of the Canadian Medical Association. But he would be a bold man who would state that Dr. Beausoleil owes his present position to any one gift or superiority over his fellows in matters essentially pertaining to the medical man. It is not as a medical man, but as a medical politician that he has come to the fore, and it may well be questioned whether it is seemly that the profession should be controlled by him. It is true that largely through him reciprocal inter-provincial registration between several of the provinces has become possible, but that has been at the cost of making him President of the Canadian Medical Society, and having raised him to this honour, it cannot be said that he has achieved full success. It is true that again through him the College has obtained some few hundred of the Theses of the University of Paris, but it is ludicrous to hear those Theses spoken of as though they themselves constituted a library, and as though they were to be circulated by post to the

members of the profession scattered through the province. We are inclined to ask Dr. Beausoleil if he will state clearly the circumstances which led to the College of Physicians coming into possession of these same Theses. It is interesting further to hear from Dr. Beausoleil's circular that the College is going to establish a clinical and physical laboratory for the benefit of the profession. Is this also going to be circulated? What is the scientific standing of the gentleman, of whom now we hear for the first time, who is to be appointed head of the same? Certainly the name is not familiar to us. And lastly, as to the improvements which, according to Dr. Beausoleil's circular, have been forced upon Laval University, the very tone of the reference to these improvements indicates most clearly the spirit in which they were brought about. We are not versed deeply in the matter, but it is abundantly evident from the circular that personal spite rather than public spirit would seem to have been at the bottom of the changes which have been made.

Had Dr. Beausoleil been able to point to legislation achieved for improving the status of the physician in the law courts, for putting some stop or attempting to put a stop to quackery, for controlling to some extent the competition and sale of proprietary medicines, and had he, in short, been able to show that through the period during which he has controlled affairs, the status of the profession and the position of the College itself had been improved, there might have been a very different verdict returnable next July. The status of the College is not improved; indeed it is impossible to respect a body which allows unsavory rumours to circulate concerning the finances, and concerning the attitude of its officials with regard to the granting of licenses, which ignores these rumours and never demands investigation. The only way in which to bring about a betterment of affairs is to effect some radical alteration in the mode of election of the Board of Governors of the College. It can be no disadvantage to appoint members of that Board for districts, and to make them responsible to the members of the profession for their districts; thereby the governing body will no longer be irresponsible but responsible; thereby the standing of the College and its Board will assuredly be raised.

The College of Physicians and Surgeons represents not only the French, but all the members of the profession in this Province, and anything that lowers its standing, lowers our standing and self-respect. It is the duty of each and every one of us to demand that the present unsatisfactory government of this body continue no longer, and to work actively to make it a respected and creditable organisation.

THE MONTREAL BRANCH OF THE VICTORIAN ORDER OF NURSES.

We are glad that at last the Victorian Order of Nurses, after much debate, has settled down to practical work, and that in Montreal, Toronto, and in other large centres in Canada, an active beginning has been made. We wish that the policy which now animates those interested in this most excellent movement had been made evident from the first. Members of our profession, and not only they, but the well-to-do and the charitable in this and other cities, showed a most natural hesitation in supporting the scheme as it was first brought to their notice. The scheme was altogether too large, and we must say, too pretentious, add to which, as some of our contemporaries have pointed out, undoubtedly as at first put forward, too large a proportion of the income of the Order would have had to be devoted to the central organisation and too little to the working of the local branches and to the nurses scattered, as it was hoped, throughout the Dominion.

It is a general law ruling all human institutions, that if they are to succeed they must begin in a small way and undergo a natural evolution. No better examples of this can be afforded than the futile attempts that have been made to establish a fully developed parliamentary system, as it obtains in the home of its origin, upon half-civilized people like the Egyptians, or the very partial success that has been attained by the same system when transplanted into most advanced civilisations like the French and the Austrian. The only successful way of promoting this scheme of district nursing is to perfect carefully the local branches, and when these branches have been brought into thorough accordance with the needs of our Canadian people, to allow them naturally to develop into a national institution of district nurses.

Thus, therefore, it is with great pleasure that we note the modest beginning that has been made here in Montreal. Three thoroughly good nurses have been chosen and given a central home, and it is open to all medical men of the city to obtain their services for deserving cases in the order for which they are called for.

With so small a staff it is impossible that they can be called out upon night service, and indeed it would be unadvisable that they should be required night and day. The main object of this district nursing, is not that the nurse should remain permanently with the patient, but that she should call in one or two times each day, see to the comfort of the patient, follow the doctor's orders with regard to the cleaning and bandaging of wounds, and perform those services which

the medical man cannot expect from the untutored friend or relation. More than this is not necessary for the practical success of the scheme. We are glad to see further that while no charge will be made for the nurse's services in necessitous cases, where a patient can afford to pay, something will be required in return for the services rendered ; how much is to be asked in each individual case will be determined by the Committee of the Branch. We have no fear that working along these cautious and practical lines the Victorian Order will be found of great aid, not only to the patients, but to members of the profession, and we feel assured that it will steadily gain in popularity, and will obtain increasing support from the charitable.

We candidly confess, however, that we cannot but regret that at the moment when the local branches are being started in this eminently sensible manner, it should have been thought wise by the central authorities to issue an appeal for funds to send nurses to the Klondyke. Were those who are now rushing northwards impelled by noble desire, were their object to add to the glory of our Dominion rather than fill their own pockets, there would be strong reason for asking for this fund for nurses ; as it is, it is difficult to manufacture sympathy for the run after gold. We do not mean to say that it is not right that there should be nurses, and good nurses, in the Klondyke, or that we are insensible to the hardships which will be undergone in the far north ; we only say this, that, as a matter of policy, the appeal, coming at the present time, is a mistaken one. It is but another proposal by which it will be impossible to arouse enthusiasm for the Victorian Order. No one can bring forward serious objections against local efforts on the part of the Order—indeed everyone must eventually sympathise with the work done under their eyes—but people can and will object to supporting an order which, from the start, enters into a big and doubtful project. We do not say this selfishly, we do not wish to urge that the money of the charitable should be applied locally, but we do say that, as a matter of policy, a series of simple and well sustained local efforts will be the means whereby the order will grow in favour, and when it becomes of established popularity it is then, and not at its inception, that wider schemes may be indulged in.

OSTEOMYELITIS.

Dr. Wylde's report of a case of multiple osteomyelitis on another page is interesting in that it draws attention to a somewhat rare condition, but one that unfortunately only too often ends fatally, from acute septicæmia and pyæmia. Whether surgical treatment would have changed the result or not is doubtful. The diagnosis should not be difficult, but similar cases have often been incorrectly diagnosed as acute articular rheumatism, or typhoid fever, or pyæmia, the true nature of the condition being subsequently determined in the post-mortem room.

The bacteriology of acute osteomyelitis has been pretty thoroughly worked out in recent years, and the nature of the disease is understood, but the treatment is yet unsatisfactory, in this, as in so many infective diseases. The idea, at one time entertained by the German and French investigators, that osteomyelitis had a distinct germ of its own, so to speak, has been disproved, and it is now known that many pyogenic organisms, if properly introduced, under favourable circumstances, may give rise to osteomyelitis; the staphylococcus and streptococcus are frequently the active agents. The typoid bacillus alone, or in association with some other germ, is a not infrequent cause of osteomyelitis of a mild subacute form. It is not so easy, however, to explain the onset of these cases of acute multiple osteomyelitis, in which the infection is of a most virulent type, spreading from bone to bone and proving fatal in a few days. Sometimes, as in Dr. Wylde's case, the onset follows an abrasion, a slight wound, or compound fracture, and gun shot injury on the battlefield may be the exciting cause, but in many cases there would seem to be no such etiological factor evident. A boy becomes heated during play, throws himself upon the grass, and develops acute osteomyelitis. Where is the "*locus minoris resistintiæ*" in such a case? Through the intestines, as suggested by Kocher, or through the tonsil, as suggested by Kraske, or through some other channel?

Clinically, the great point is early diagnosis of the lesion and a correct estimation of the virulence of the infection.

The first point may be determined by a careful physical examination, and the second by the character and degree of the constitutional disturbance.

The pain is generally referred to a joint, say the knee-joint, but further investigation will show that the point of maximum tenderness and the pain are a little above or a little below the articulation.

The joint itself is seldom involved, and if at all, only secondarily. The starting point is invariably near the epiphyseal cartilage, "the zone of election of pathological processes" of Ollier.

The only effective treatment is surgical, but just how many cases of the pyæmic form of osteomyelitis may be saved by early surgical interference, further experience is needed to answer. The indications however are clear. Incise over the infected spot, trephine the bone and scrape out all the infected area. To accomplish this a Volkman's spoon should be used and the cavity should be flushed out with strong germicidal solution. Formalin in watery solution might be used as strong as 1-300 or 1-200, and the cavity, if well limited, might be carefully dried and touched with pure carbolic acid. When several bones are involved, and the patient is decidedly toxic, the prognosis would be decidedly bad, but if operative procedures are not contra-indicated by the conditions obtaining at the time of examination, the patient should surely be given what chance there is.

If operation is refused, probably the next best course would be the packing of the part in ice and the free use of stimulants and supporting measures.

The cases reported by Dr. Bell before the Medico-Chirurgical Society of chronic osteomyelitis, or more correctly the sequelæ of that condition, present the subject in an entirely different aspect. The difficulty in the latter instance is to obtain closure of a septic discharging bone sinus, the problem in the other class of cases is to save the patient's life from acute septic poisoning.

DISTRICT ELECTORAL COMMITTEE OF THE MEMBERS OF THE MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Circular to the Profession.

Sir,—For some time past many members of our profession have urged that the elections to the Board of Governors of the College of Physicians and Surgeons of this Province should be made by districts, so that each part of the province might choose its own representatives on the Board. In that case each representative would be responsible to his constituents in his own district for his acts and votes, and such an arrangement would make it practically impossible for any one or two men to control the election for the whole province, as is now practically done.

The present governing body, or more correctly, those who presume to act for it, have persistently opposed this most legitimate demand, and have managed to defeat every motion with this end in view which

has been brought forward at the meetings ; they have also done their utmost to defeat any legislative amendments to the Medical Act which would render such territorial representation possible. It would be vain, therefore, to hope that they will ever spontaneously accord to the profession this right ; for, during the passage of the recent medical legislation at Quebec, they actively opposed and managed to defeat an amendment, having this end in view, which a prominent medical man had brought before the Legislative Council of the Province.

The Board has not resisted, as it should have done, the numerous applications made by different individuals at every session of the Legislature to obtain an irregular entrance into the profession ; and it is hard to believe that all the reports, which are current, of licenses obtained by roundabout methods are purely mythical. Add to this that the financial administration of the Council is far from satisfactory, and lends itself to abuses which all must have noticed who read the official reports. Reforms in the manner of keeping and collecting the accounts are urgently needed, and it is imperative that the duties of the Treasurer, Registrar and Secretaries should be clearly defined and enforced. If the salaries of the officials were not augmented, or new ones needlessly created, and if the Treasurer collected yearly the dues of all the medical men in the province, it would be easy to lessen the amount of the annual assessment and still meet all expenses. The present system of allowing the arrears of dues to accumulate is not only a serious injustice to those who do pay, but is also a source of annoyance to those who do not pay, purely because notice of the amount due is not regularly sent to them ; inasmuch as they are thereby debarred from voting at the triennial election of governors, and, in addition, loose their legal rights before the courts.

In order to remedy these and other abuses in the present order of things, the undersigned, at the request of a large number of the profession, have formed themselves into an electoral committee. This committee begs you, at the coming election, to aid it in electing a Board of Governors who can be depended upon for the reforms indicated in this circular, and generally to see that the affairs of the College are managed in a straightforward, business-like way, and that a sincere effort is made to give the profession proper representation and the protection from illegal competition to which it is entitled ; and to make to the members of the College of Physicians and Sur-

geons of this Province some adequate return for the dues collected from them each year.

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R. Craik, M.D.
Wm. H. Hingston, M.D.
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J. M. Elder, M.D.,
Secretary.

NEW BOOKS, ETC., RECEIVED AND NOTED.

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Diseases of Women. By Arthur H. N. Lewers, M.D. H. K. Lewis, London, 1897.

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Trois Cas de Chirurgie du Larynx. By J. Pantaloni, M.D. (de Marseille). Reprinted from the Archives Provinciales de Chirurgie, September, 1897.

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Notes on the Non-Surgical Treatment of Boils, Carbuncles, and Felons. By L. Duncan Bulkley, A.M., M.D. Reprinted from the British Medical Journal, December, 1897.

What Inferences may be drawn from Cases of Pulmonary Tuberculosis, reported to have Originated in Colorado. By S. G. Bonney, A.M., M.D. Reprint from the Annual Report of the Colorado State Medical Society, 1897.

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXVII. APRIL, 1898. No. 4.

Original Communications.

THE LOCAL TREATMENT OF ECZEMA.[1]

BY

W. M. NELSON, M.D.

The subject to which I desire to call your attention to-night is the local treatment of only the more common forms of eczema, and it will not be out of place to offer first a few general directions regarding the cleansing of eczematous surfaces and to detail some approved methods for the removal of secondary products—such as crusts and scales.

For cleansing purposes.—Avoid, if possible, the use of plain water or soap and water. If the former has to be employed it should be as hot as can be borne, and the surface over which it has been used should be dried quickly and thoroughly and the selected dressing immediately applied. All detergent fluids should be warmed before use. Olive or cottonseed oil will cleanse almost as well as soap and water, and, if the part is carefully wiped, but little greasiness remains. Again, water boiled with a small quantity of oatmeal, bran or barley, and then strained can be used with comparative impunity. Or thin strained rice-milk cleanses well and is soothing to tender and acutely inflamed surfaces. Thin hot starch, to which has been added boric acid in the proportion of a teaspoonful of the latter to a pint of the former, is a very excellent and soothing detergent.

To remove crusts, scales, etc.—Before any line of local treatment can be begun all secondary products—crusts, scales, etc.—must be removed. This can be accomplished by saturating them with oil. For instance, in a case of eczema of a child's or infant's head, where numerous crusts are present, the part should be well sopped in oil and then covered with pieces of lint or canton-flannel which also have

[1] Read before the Montreal Clinical Society, January 28th, 1898.

been saturated with the oil, and over all placed a well-fitting cap or fez. The process is to be repeated until the crusts are soft enough to be wiped, combed or picked off.

Starch poultices are very useful for non-hairy parts, but require to be properly made. The method of doing this is to blend the starch thoroughly with tepid water, not using more of the latter than is just sufficient to make them blend, then pouring on boiling water till the substance assumes the proper consistency. After this place the containing vessel on the stove for a minute or two and add a teaspoonful of boric acid to each pint of the contents, stirring briskly. Gruel, with the addition of a teaspoonful of sodium bicarbonate to the pint, is also of use. Decoction of marshmallow (althææ radix), with the same amount of soda, is pleasant and serviceable.

When the surface is not tender, and the scales and crusts are dry and abundant, the free use of vaseline acts fairly well. The macerating qualities of this petroleum product that are so often injurious to other conditions are here of decided benefit. When the scales are harsh, tough and adherent, other measures than those already given will be necessary, and these will be mentioned when dealing with subacute and chronic eczematous conditions in the adult.

Local treatment for the relief and cure of eczema is, in the great majority of cases, the only satisfactory one. The fact that the skin is an organ with its own peculiar functions to perform, and just as subject as any other to structural disease and to functional disorder is often lost sight of. Every morbid condition may be present in the economy without eczema or *vice versa*. That any discoverable defect in the general health should be attended to, is not to be denied for a moment, neither is the oft-repeated plea for putting the patient into the best possible condition.

Eczema may be acute, sub-acute or chronic. These terms are often used with different meanings—either referring to the intensity of the process or its duration. In what I have to say to-night they will be used to define the actual condition present, and not the length of time it has existed.

Infantile eczema, *i.e.*, the disease as usually seen in those under five years of age, has a couple of marked peculiarities, viz., a great tendency to become pustular, and to be confined to the head and face. In over 80 per cent. of all cases the head and face are alone affected. In the acute variety, where there is free pustulation, the crusts are to be removed, and, if necessary, the hair cut short. Then one of the following may be applied continuously : Equal parts of almond oil and lime-water with 2 per cent. to 4 per cent. of ichthyol. White

precipitate grs. v—x to the ounce of simple or other ointment, or lotio nigra with 1 per cent. to 2 per cent. of carbolic acid. So soon as the process has become subacute, an ointment or soft paste, containing 2 per cent. to 10 per cent. of salicylic acid may be substituted for the oil or lotion. It is in this stage that the soft pastes such as Lassar's or Ihle's, find their place. As Lassar himself says, "the influence of the soft paste is a benignant one. It produces a soft, slight scaling, and, besides, a constant drying, because it acts like a filter. All the lymphatic exudations pass through the porous layer and are drawn out into the bandage instead of forming a crust upon the wounded skin itself. This is an important advantage for the completion of regeneration, because the epidermis is not obstructed by masses of adherent exudate." Lassar's paste consists of acid. salicylic gr. x—xxx, amylum, zinci oxidum aa ℥ii, vaseline, ℥ss.

If the disease is seborrhœic in character, resorcin, sulphur, white precipitate or oleate of mercury may be used. Ihle's paste is a good application. It is resorcin gr. x, amylum, zinci oxidum, lanolin, vaseline aa ℥ii.

In *sub-acute vessicular eczema of the scalp*, Lassar's paste can be used from the first, and the percentage of the acid increased from 3 per cent. or 5 per cent. up to 10 per cent. Should the itching be troublesome, a small quantity of the oil of cade may be added.

In chronic eczema of scalp—that low form seen both in childhood and adolescence—the "Shepherd's salve" is very valuable: Hydrarg. sulphurati rubri 1.0, sulphur sublimatum 24.0, adeps, 75.0, ol. Bergamottae gtt. aliquot. The oleate of mercury, in increasing strength, often acts admirably.

Eczema of the face.—According to Unna, eczema of the face in infants occurs in three forms—the nervous, the seborrhœic and the tubercular.

1. The nervous: The characteristics of this form are that it begins on previously healthy skins, is confined to the forehead, cheeks, and chin, leaving the middle of the face clear, "like a mask with the centre cut out," is extremely itchy, tends to recur and is most often met with during dentition or accompanying gastro-intestinal disturbance.

For the treatment of this form the soft pastes are excellent. Lassar's is particularly useful, by itself, or with other drugs, such as ichthyol 3 per cent. to 6 per cent., or the tars, incorporated with it. These pastes should be applied under a mask, and renewed two or three times a day. When it is desirable to clean the surface and remove any of the paste that may be adherent to the skin, oil, and oil only, should be made use of.

The glyco-gelatines and varnishes are often of great service, as they are cleanly and require no mask or bandage. The formulæ for these will be given later on. It is most important that the patient be prevented from scratching, as little of a remedial nature can be done so long as the finger-nails continue to irritate and infect the already diseased surface. Two ways of preventing the child from reaching its face, and, at the same time, allowing a certain freedom of movement of its arms, are as follows: the use of a long sleeved garment, the sleeves of which are fastened to the sides by safety pins, or, the placing of a light splint on each arm.

2. The seborrhœic: This form is always preceded by a seborrhœa of the scalp. It attacks the ears, cheeks, and eyebrows, and may extend to the neck, shoulders, and upper arms. There is not so much irritation and itchiness as in the nervous form, and the crusts and scales are distinctly fatty in character. In treating this form, the scalp, of course, must receive the same attention as the face, as the former is the source of infection. After clearing away all crusts and scales, any one of the following may be used with advantage. Sulphur sublimati vel præcip. gr. x., ungt. aq. rosæ ℥i. Sulphur præcip. gr. x., resorcin gr. x.—xv., ungt. aq. rosæ ℥i. Resorcin gr. x.—xv., ungt. aq. rosæ ℥i. Ihle's paste. Hydrarg. oleatis (10 per cent.), ℥ gr.—℥ii. ungt. simpl. ℥i. Thymol gr. v—x., ol. olivae ℥i. Bassorin varnish with 1, 2, or 3 per cent. resorcin or sulphur (for face only).

3 The tubercular. This is caused and kept up by a discharge from the eyes, ears or nose. Stop the pus supply and the face lesions will rapidly disappear with the use of a white precipitate or any other antiseptic ointment.

Eczema intertrigo.—The parts covered by the napkin, and where two surfaces of the skin are in contact, are those usually affected by this form of disease. The first essential in treatment is extreme cleanliness and dryness. Powders may be used with benefit, such as equal parts of impalpable boric acid, kaolin and starch, carbonate of magnesia, or pulv. aluminis, acid boric aa gr. xv, acid carbolic gr. iii calcii carb. præp. ℥iiss, pulv. amylum ℥ ss.

As a general rule, however, absorbent antiseptic soft pastes are preferable. A very good application is ichthyol ammon-sulph. gr. v.—xx., zinci oxidum, magnes carb. aa ℥ii., ungt. aq. rosæ ℥ ss. applied continuously.

Eczema of the face in adults.—This is usually erythematous in character, the surface being red, infiltrated and covered more or less with fine scales. Sometimes it may be moist and somewhat crusted. If the condition is an acute and irritable one, soothing and

cooling applications are in order; if sub-acute or chronic, those of a stimulating nature are to be brought into use. Nearly all acute cases do best with lotions, and those that leave a fine and impalpable powder on the skin are to be preferred. The modified calamine lotion is one of the best. An ichthyol liniment is also useful, as it soothes, lessens the hyperæmia and is keratoplastic and antiseptic. Calamine liniment is also a useful application. Pulv. calamina præp. ʒiss. zinci oxidum ʒii. aq. calcis, ℥iss. aq. sambuci ad. ℥iv. Ichthyol gr. x-xx. ag. calcis, ol amygdal. aa ℥ss. calamina præp. ʒiss. zinci oxidum ʒii., aq. calcis ol. olivæ aa ʒii.

All soothing remedies should be applied constantly, the mask only being lifted to clean the surface or renew the application, which latter should be done frequently. When the disease has become sub-acute, or has been so from the first, diachylon ointment with salicylic acid may be used, and, to control the itching, ol. juniper, ol. picis, carbolic acid, menthol or camphor may be added. Lassar's paste is very valuable also, and the same anti-pruritic drugs as those just mentioned may be incorporated with it.

In private practice and for fastidious patients generally, tragacanth jelly or Bassorin varnish may be used to the exclusion of anything else, or, ointments or hard pastes can be used at night, and the jelly or varnish during the day. Pick's jelly is a sample of this style of preparation, but another and better is the Bassorin varnish introduced by G. T. Elliott, of New York: Bassorin 48.0, dextrin, 25.0, glycerin 10.0, aq. ad. 100.0. Pick's jelly is gum tragacanth 50, glycerini 2.0. aq. ad. 100.0.

To these may be added whatever remedy is indicated—such as tar, resorcin, salicylic acid, etc., etc.

Eczema barbae simplex.—Shaving should be begun at once, unless the parts are too acutely inflamed, when soothing applications are called for; epilation is often recommended, but is seldom necessary when shaving is practised, as the loosened hairs come away with the pull of the razor. Any of the following ointments or creams are curative:

Hydrarg. oleatis (10 per cent.) ʒii—ʒiv to the ℥ of lanoline cum oleo. Ungt. hydrarg. nitratis ʒi—ʒii, vaseline ℥i. Ungt. diachyli alone or with carbolic acid, salicylic acid or ichthyol. Ungt. hydrarg. nitrat ʒi—ʒii, ungt. sulphuris ʒii, acid carbolic gr. iii, ungt. simplex ad ℥i. Ungt. hydrarg. oxid. rubri ʒi ss., ungt. sulphur ʒiii, resorcin gr. xv, ungt. simplex ad ℥i.

The selected ointment or cream should be gently worked into the affected parts at night and cleansed off in the morning with very hot

water: after which the parts are to be thoroughly dried and then smeared with one of the varnishes or jellies to which some appropriate drug has been added. A little powder over all will do away with the shine of the varnish or jelly and improve the general appearance..

Eczema of the adult genitals.—This is a common and most distressing variety of the disease. It may involve the scrotum only in the male and the vulva in the female. Usually the parts are reddened, infiltrated, excoriated, moist and intolerably itchy, but sometimes they are only erythematous, dry and scaly. The process is usually subacute or chronic: when acute, ointments are to be avoided, as they seldom do any good.

In the acute form any of the following may be used: Calamine liniment, calamine lotion, lactate of lead, *i.e.*, lig. pb. subacet. ʒi to ʒii of sweet milk, or a lotion such as Duhring's:—Bismuth carb., amylum, glycerinum, aaʒss, aq. lauro-cerasi ʒiv.

In the subacute and chronic forms, control the itching, and stimulate and remove the infiltration.

1. To control the itching. 1—3 per cent. nitrate of silver in spirit of nitrous æther painted over the diseased surface, beginning with the lower strength. Cloths wrung out of boiling water and applied as hot as can be borne for a few minutes, the part is then to be rapidly dried and the ointment selected put on. Best of all is Crocker's plan of applying a mustard leaf over the lumbar enlargement of the spinal cord.

2. To remove the infiltration and thickening, tars, salicylic acid or the two combined. Mercurials, such as the white precipitate, or the oleate combined with morphia—1 gr. of the latter to ʒi of the former. Jackson's method of sweating may be used in dealing with the scrotum. *i.e.*, enveloping the part in sheet rubber and supporting it with a suspensory bandage, or, another way is to line a suspensory with gutta-percha tissue, inside of which is the selected ointment spread on lint or canton flannel. These ointments may also control the itching.

Eczema ani.—The anus may alone be attacked: usually, however, the disease is present nearby. The itching here is very great, and stronger applications can be used than on the genitals. Hot water applied as before described is peculiarly grateful. Any of the stimulant and anti-pruritic ointments mentioned above may be used, the strengths being slightly increased. Duhring uses the following as a sort of routine treatment: Sulph. pracip. gr. xv, naphthol gr. xx, morph. acetat. gr. ii, zinci carb. ʒi, ungt. aq. rosæ adʒi.

Eczema of the legs is seldom seen except in middle-aged or old people, and is generally associated with varicose veins, which must, of course, receive appropriate treatment. Rest in a horizontal position will always hasten the cure. When the condition is acute, and œdema, swelling and weeping are present, a simple 3—4 per cent ichthyol lotion, continuously applied, is indicated. Kaposi uses the following: Aluminii sulp., cryt. 30.0, acid. acetic 30.0 : calcii. carb. 13.0, aquae 100.0.

Burow's solution is another good one—diluted 1—10 to 1—50 : Plumbi acetatis ʒx, alum ʒv, sodii sulphatis ʒi, aquae ℥x. Dissolve the pb. in ℥x of water, and the sodium in the remainder. Mix, stir and let stand for two days, filter without washing the residue.

In those cases of painful eczema of the legs seen most frequently in women, equal parts of lead lotion and black wash, with gr. xxx of oxide of zinc to the ounce will often give prompt relief.

For chronic moist eczema, with marked infiltration and hardening, spiritus saponis viridis (℥ii green soap—℥i spts) or, the compound tincture of green soap of Hebra, ol. cadini, saponis vir. spts. vini rect. aa℥i, spt. lavandulæ ʒii : or soft soap itself, with diachylon, salicylic or tar ointments.

The glyco-gelatine preparations are : Gelatin alb. 15.0, zinci oxidum 10.0, glycerinum, 30.0, aqua 40.0 : or Gelatin alb. 15.0, zinci oxidum 10.0, adipis 10.0, glycerin 65.0.

The consistency can be altered as desired by increasing or lessening the proportion of glycerine. While the part is being cleaned, made aseptic and thoroughly dried, the pot containing the glyco-gelatin should be in hot water so that its contents will be liquified. Apply evenly with a bristle-brush, and, before it sets, place over it a film of absorbent cotton or a piece of thin, soft muslin.

Plasters (made by J. & J. and S. & J.) containing salicylic acid 10—50 per cent., salicylic acid and oxide of zinc or ichthyol and salicylic acid.

Martin's rubber bandage may be used during the day and an ointment applied at night.

Eczema of the hands may be acute or chronic, but usually it is chronic with acute exacerbations.

When acute the treatment does not differ materially from that already described for the same process elsewhere. In the subacute and chronic form first remove the thickened epidermis by one of the following :

1. Unna's plan of applying 20 per cent. salicylic acid plaster which form a sort of splint to the fissured surface, acts continuously and needs renewal only at intervals of a day or two.

2. Constant application of a pancreatic emulsion or glycerale of papoid.

3. The continuous employment of a salicylic and ichthyol ointment, 10 per cent. of each.

4. The method employed by Dr. Shepherd, liq. carbonis detergens is painted on pure at night, lanoline applied after and again in the morning. He claims to not only remove the hypertrophy and infiltration but at the same time to produce a distinctly curative effect upon the disease itself.

After getting rid of the thickened epidermis, an ointment, paste, gelatine, varnish or plaster containing salicylic acid and ichthyol can be confidently recommended, judging the strengths according to the degree of acuteness or chronicity of the lesion. The tars (ol. picis, ol. rusci or oil of cade) are also serviceable, beginning with a moderately weak application. Duhring's routine ointment is : Ungt. picis ʒii, calomela ʒss, vaseline ʒvi.

Case Reports.

A CASE OF MALIGNANT ENDOCARDITIS.[1]

BY

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The following case seems to me to be of sufficient interest to be related before this Society.

Solomon Iseman, a Russian peddler, aged 32, was admitted to the Montreal General Hospital, under Dr. Molson's care, on the 5th of February, 1898. His chief complaints were weakness, vomiting, and a feeling of chilliness. He had come to Canada eight years ago, and some time before emigrating had had an illness which was probably malaria. In this country he had had gonorrhœa four years ago which lasted six months, and an accident seven years ago which had necessitated amputation of the right arm in its upper third. He had never suffered from rheumatism or syphilis.

The onset of his illness was on the evening of December 30th, 1897, with lancinating pain in the left side of the chest and right knee, and during the night he felt feverish and had a chill. Two days later he had less pain, and was able to get up and do some work in the house.

On January 5th, 1898, he applied for relief at the Out-door Department of the General Hospital, where a diagnosis of subacute rheumatism was made. During the next three days he felt worse, and had coryza with sneezing, but by the 9th was well enough to resume his peddling. On the 13th he was again ill with malaise and nausea, but no vomiting or chills, and was seen at the Out-door Department on the 15th, 19th and 22nd with much the same complaints. On the 26th there were headache and vomiting, and on the 29th the same symptoms, with a temperature of 101·4° F. and respirations 40. On February 1st he had another chill. When seen the next day he still complained of vomiting: there was diminished resonance at the base of the left lung, with moist sounds as far as the upper lobe. Temperature, 100°; pulse, 106.

On February 5th he was admitted to Dr. Molson's ward, and the following is an abstract of the notes entered in the report for that day: He was somewhat breathless and had a frequent cough, with

[1] Read before the Montreal Medico-Chirurgical Society, April 1st, 1898.

scanty muco-purulent expectoration, and vomiting, chiefly of curdled milk. He made no complaint of any pain. Temperature, 99°, rising to 104.6° at 10 p.m., with chill; pulse, 80; respirations, 20-24. Nutrition fairly good: face flushed; skin hot; mucous membranes of good color; a greyish fur on the tongue; no œdema.

Examination of the lungs showed enfeeblement of the breath sounds in the left lower axilla, with fine crepitus, and behind dulness from the middle of the scapula to the base, with feeble breath sounds and fine râles at the end of inspiration. The sputum contained no tubercle bacilli or pneumococci. The cardiac impulse was felt but not seen in the fourth intercostal space half an inch inside the mamillary line. Relative cardiac dulness vertically at the upper border of the third costal cartilage, and laterally from the left sternal border 3½ inches to the left. There was accentuation of the pulmonary second sound, but there were no murmurs. Pulse regular, of good volume, but compressible. No thickening of the radials. Spleen dulness increased, but the splenic border not palpable. Liver dulness 5½ inches from the fifth rib in the right mamillary line. Urine.—High colored, smoky; sp. gr., 1010; alkaline, albuminous, and containing blood, blood casts and epithelial casts.

principal points in the diary of the case are as follows:

From February 5th to February 10th there were vomiting and a daily rise of temperature to nearly 105 F., with chill followed by sweating occurring between 10 p.m. and 4 a.m. On February 7th exploratory puncture over the base of the left lung with a negative result, and on the 11th a similar result from exploratory puncture of the liver in front. A blood examination for the plasmodium malariæ was equally negative. On this day the vomiting was more frequent. The first sound of the heart was weak, and there was a distinct yellowish tint in the skin.

On February 14th I saw the patient for the first time. Since the 12th the temperature range had been lower and he had had no chills, but was still vomiting and felt very weak. The spleen was now distinctly palpable, the hepatic dulness within normal limits, and the first sound of the heart was very weak. I came to the conclusion from a study of the history of the case and by exclusion that the case was probably one of malignant endocarditis.

February 15th—Cultures were made from the blood drawn from a finger with a negative result.

February 17th—Vomiting less frequent. Tongue brown and dry. Temperature, 96-100·6. Cardiac dulness from the lower border of the second costal cartilage, and laterally from the left sternal border to

the mammillary line. A soft blowing systolic apical murmur, and a faint diastolic murmur in mitral area with accentuation of the pulmonary second sound. Spleen still further enlarged, and palpable to almost midway between the border of the ribs and the navel. Eye-grounds examined by Dr. Gardner and pronounced normal.

February 21st—More marked pallor of the face. Cardiac dulness as in previous note; first sound now quite audible at the apex, and diastolic murmur heard over mitral area. Typhoid serum reaction negative.

February 22nd—A further increase in area of cardiac dulness, both vertically and laterally. Apical systolic murmur again distinct and transmitted to axilla. Diastolic murmur now heard at the base and slightly down the left border of the sternum. The breath sounds were feeble at the base of the left lung, but there was now only very slight impairment of resonance.

February 26th—Vomiting more frequent, and retching when the stomach is empty. He was allowed only albumen water by the mouth, and was ordered nutrient enemata of peptonized milk and brandy, every three hours.

February 28th—Temperature curve during the last week very irregular, but lower than before. No chills. No longer retains albumen water and the vomitus is very watery and of a greenish color. Pallor increasing; cardiac condition unchanged.

On March 1st I took up the service in the wards, and, on re-examining the case, felt confirmed in the opinion already expressed. There was increasing pallor of skin and mucous membranes, with a very well marked lemon tint. Prostration was extreme and vomiting very distressing. The cardiac sounds now became almost inaudible at the apex, the diastolic murmur still being heard at the base and faintly over the sternum.

March 10th—Blood cultures from a vein at the bend of the right elbow were made, but showed no growth after forty-eight hours. The blood count on this day was: Hæm., 26 per cent. (Fleischl); erythrocytes, 1,880,000, and leucocytes 30,000 p. cub. mm. On the following day the count was: Hæm. 27 per cent.; erythrocytes, 1,760,000.

March 13th—During the last week the spleen had been diminishing in size and was not now palpable below the costal margin. Heart sounds very feeble, almost fœtal in character. Urine still albuminous, with pus cells, and pus and epithelial casts.

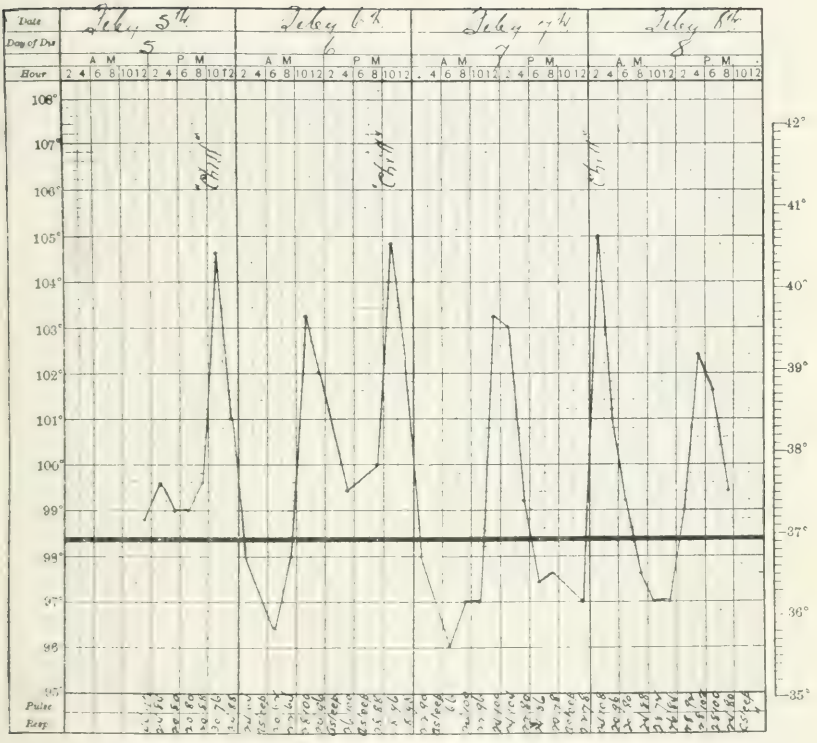
March 14th—Blood count: Hæm, 32 per cent.; erythrocytes, 2,480,000, and leucocytes, 104,000 p. cub. mm. This increase in the

erythrocytes was probably due to dehydration through repeated vomiting. The increase in the leucocytes was shown by stained specimens to be entirely in the polymorphonuclear forms, with at least relative decrease of the other varieties; such a condition as one finds in septic processes generally. No myelocytes were found. On this day there developed swelling and purplish discoloration of the ankles and left wrist, with extensive subcutaneous ecchymoses on the left forearm. Death occurred during the afternoon.

Autopsy.—The autopsy by Dr. Wyatt Johnston showed extensive soft vegetations with a slit-like acute ulceration in the mitral valve. The aortic valve showed old shrinking and fleshy vegetations, which had a slightly gritty feel. The spleen and kidneys showed acute swelling and a few old infarcts. In the heart muscles were numerous small white necrotic spots, not suppurating. The bone marrow was abundant, but free from suppuration. Diplococci, staining by Gram's method, were found microscopically in small numbers on the vegetations. Cultures in serum from the vegetations, and from the organs, remained sterile.

The point of chief interest is the absence of any embolic phenomena, with the exception of the acute nephritis with hæmaturia which occurred in the earlier part of the illness. The diagnosis was based more on the phenomena of general sepsis, associated with dilatation of the heart and cardiac murmurs of varying intensity and distribution. It is impossible to make any definite statement about the original illness which was the cause of the infective endocarditis, but on the whole it seemed to me that influenza was at least to be thought of in view of the signs, subjective and objective, in the respiratory organs both before and on admission to the hospital. There was no clinical evidence of a prior endocardial lesion. Apart from free stimulation the treatment was purely symtomatic. The idea of using anti-streptococcus serum was entertained, but was abandoned in the absence of any definite evidence that the infection was a streptococcal one.

On the opposite page is shown the temperature chart for the first four days after admission to hospital. This septic character continued during the first ten days.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41°
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36°
35°
Pulse
Resp.

Clinical Reports.

TUBERCULAR PERITONITIS,

BY

F. G. FINLEY, M.D.,

Assistant Professor of Medicine, and Associate Professor of Clinical Medicine McGill University; Attending Physician, Montreal General Hospital.

Tubercular Peritonitis—Abrupt onset—Latent Pulmonary Tuberculosis—Laparotomy.

The patient, a man of 42, was admitted to the hospital on February 7th, 1898, for pain and swelling in the abdomen. He stated that his health was always good up to last July, when he suffered with shortness of breath for two weeks. Toward the end of December he felt tired and unable to work. After a long drive on January 2nd, the following day he was feverish, and suffered from severe pain in the back. There was also pain in the right inguinal region, and pain and difficulty, but not undue frequency, of micturition. The abdomen became swollen on January 6th.

Pain has been present in the left side of the abdomen for about an hour whenever he takes much solid food, at times sharp and startling in character. He has lost 30 lbs. since July. Neither cough nor expectoration have ever been present.

The *family history* is negative as regards tuberculosis and cancer.

Examination.—He is a rather poorly nourished man, slightly anæmic, the temperature varying between 99° and 101°, the tongue coated, and the pulse 80. The abdomen slightly distended and the muscles rather tense. There is increased fullness on the left side below the ribs, and a gurgling sensation, but no clearly defined tumor. The note is dull in both flanks, especially the left, unaltered by change of position, and there is slight fluctuation over the tumor. At the right apex there is dullness both front and back, with fine crackling and sibilant râles; no cough or expectoration. The other organs are normal, and the urine is alkaline, contains a trace of albumen, and a heavy deposit of phosphates, but no pus.

The condition remained unchanged, slight fever being present, and on the 24th he was transferred to Dr. Armstrong's ward for laparotomy. The operation was performed on February 25th, when the intestinal coils were found much matted together by moderately firm adhesions. Numerous tubercles were scattered over the peritoneum, and small pockets of fluid were present on the left side. A good recovery from the operation ensued, the stitches being removed on the tenth day, and the patient was up on the 18th. The temperature continued elevated in the evening, but showed a rather lower average than before the operation, but with occasional rises to between 102 and 103. He left the hospital on March 9th, feeling in better health, free from abdominal pain, and his general condition somewhat improved.

In this case the diagnosis of tubercular peritonitis rested on an indefinite tumor in the abdomen, with fever, and on the presence of physical signs of tuberculosis at the apex of the lung.

Miliary tuberculosis of peritoneum—Laparotomy—Subsequent involvement of pleuræ and pericardium.

The patient, a woman about 21, domestic servant, was admitted to the hospital for abdominal swelling. She came to the city last fall, and had been gradually

losing flesh from the previous summer, going down from 124 to 106 lbs. between these periods. On January 23rd, 1898, she noticed slight abdominal swelling in the morning, and by evening she was unable to button her clothes. About the same time she began to suffer from night sweats, and was admitted to the hospital on Febrvary 6th. There was then some shortness of breath on exertion. There was at the time of her admission evidence of ascites and fever. A diagnosis of tubercular peritonitis was made, and Dr. Armstrong performed laparotomy and emptied the abdominal cavity of fluid on February 11th. The peritoneum was then studded thickly with tubercles. She continued, however, to have high temperatures, with evening exacerbations; the loss of flesh continued, and on February 24th she was transferred to the medical ward. The note made on this date states that the patient is much emaciated, the cheek bones are prominent, the face flushed, the muscles small, the sub-cutaneous fat scanty, and the skin normal. The abdomen is slightly distended, measuring 27½ inches, there is dullness in both flanks, changing with alteration of position, but no fluctuation. The breathing is slightly hurried, 24 to 28 per minute, no cough or expectoration. Expansion is deficient on the left side: there is dullness in the lower axilla and base behind to the fifth dorsal spine. The dullness in the axilla disappears on lying on the other side. There is distant blowing breathing over the dull area. Owing to the feeble voice, resonance and fremitus show no alteration. A loud grating pleural friction which had been heard a few days previously has disappeared.

On the right side there was dulness and a few crackling rales for a hand's breadth at the base posteriorly. The apex impulse was felt in the fourth space, somewhat feeble in spite of the thin chest wall. The cardiac dulness was triangular in form, beginning above at the third rib, its right border extending obliquely downwards and outwards to join the hepatic dulness at the fifth right rib, the lower part of the sternum and the fourth and fifth intercostal spaces to the right of the sternum being dull. The left border of the triangular area of dulness extended down from the third left rib to the apex and then blended with the dullness of the fluid in the pleural cavity. On sitting up in bed the line of cardiac dulness fell about a finger's breadth; the other organs are normal.

March 13th. The patient has gained somewhat in strength, but continues emaciated. The temperature ranged from 97 to 103, being higher at night.

The fluid in the left pleura has diminished, and a pleuro-pericardial friction is present along the left border of the heart.

March 25th. The patient is gaining flesh and strength, and is able to sit up daily in a chair. The fluid in the pleuræ has much diminished.

This case is clearly one of tuberculosis involving the serous sacs and without obvious disease of the viscera. On her admission the presence of fluid in the abdomen, high temperatures, and gradual loss of flesh preceding any local symptoms, and strong hereditary tendencies to tuberculosis, rendered the diagnosis clear. The later involvement of the three great thoracic serous membranes is undoubtedly of the same character. The physical examination indicates very clearly the signs produced by small quantities of fluid in the pericardial sac. Percussion gives us the earliest and most certain indications. Dulness of a roughly triangular form, extending obliquely down and out to the right of the sternum, and especially to the fifth right space (Rotch's sign) is the earliest sign of pericardial effusion. The presence of movable dulness can often be demonstrated as in this case, and is a further sign of much value. In this case the percussion dulness was readily made out owing to the thin chest wall. It is in stout

people that a pericardial effusion is most likely to be mistaken for cardiac enlargement. The prognosis in this case is extremely unfavorable. With such extensive disease an unfavorable prognosis must be given, and although a gain in strength has occurred, the continued fever shows the process to be still active. The improvement which is going on seems remarkable in the presence of the general involvement of the serous sacs. It seems highly improbable that laparotomy should influence the process in the pleuræ and pericardium, and it seems more rational to attribute the improvement to the natural tendency to arrest of the pathological process seen in many cases of tuberculosis.

"OBITER SCRIPTA" I.

(Casual notes from the Medical Clinic of the Royal Victoria Hospital.)

BY

C. F. MARTIN, M.D.

Lecturer in Medicine, McGill University : Assistant Physician to the Royal Victoria Hospital.

(In the ensuing casual notes are embodied a few observations on cases which are of interest either in reference to diagnosis or treatment, or as presenting some instructive variations from the commoner so-called text-book types. It is hoped that while they offer no features of startling importance, there may at least be a few facts of interest to some readers of the JOURNAL.)

SOME FORMS OF NEPHRITIS.

CASE I.

Uræmia affecting a boy in previously good health—General and special diagnosis of the renal condition—Treatment.

A boy, æt. 12, had been complaining for several weeks of intermittent headaches, occasionally quite intense, sometimes persisting throughout an entire day, at other times being quite absent for several days together. With this there was vomiting, usually at the time of the headache, and at all events quite independent of the ingestion of food. The vomitus had no special characters. Careful enquiry failed to elicit any other symptoms or complaints up to the day of his entering the hospital. There was no history of scarlatina or other infective disease since infancy, nor could exposure to cold or any other etiological factor be discerned to account for the condition present.

On admission he was very restless, held his hands to his head with the intense pains, and vomited several times on the first day. The temperature was normal, the pulse 104 and of very slightly increased tension, and the respirations were 24 per minute. There was a coated tongue, anorexia, marked thirst and constipation.

Œdema and anæmia were conspicuous by their entire absence.

By a curious coincidence there lay in the adjoining bed a boy with cerebral tumour, in whom likewise the main symptoms had been merely headache and vomiting and the eye ground on examination had shown marked papillitis. The similitude of symptoms in the present case led at once to a retinal examination to complete the

classical trio of symptoms! It revealed, however, not the changes due to intracranial pressure, but a typical and far advanced albuminuric retinitis. The urine showed evidences likewise of distinct nephritis, being diminished in quantity, with $1\frac{1}{4}$ grms. of albumen to the litre. 80 grains of urea in 24 hours, and having a specific gravity of 1012. There were numerous hyaline, granular and epithelial casts. The heart was slightly enlarged to the left and at the apex there was a soft systolic murmur. The aortic second sound was accentuated: the arteries showed no sclerosis. On the following day he developed unilateral convulsions and coma, and during the first 24 hours, only 11 ounces of urine were passed.

Treatment.—At the outset, saline purgatives and hypodermic injections of pilocarpine were freely administered, though with practically no effect, and on the next day he was given croton oil, which was speedily followed by satisfactory purgation. His restless, convulsed condition made it impossible to give vapour baths properly, so that hot wet packs (for 20 minutes at a time, and at intervals of from four to six hours) were employed, producing within 12 hours a remarkable relief, the patient being quieter, partly conscious, and showing distinct improvement in the pulse. During the first 24 hours, the packs were given five times, and from that on with diminishing frequency till after four days the patient was practically out of danger, perfectly conscious, with no convulsions, or even restlessness. The urine steadily increased in quantity, and three days later he passed a normal amount. Nine days after admission, merely a trace of albumen was left, the quantity being no longer estimable by Esbach's method. Throughout the rest of his stay in the hospital his condition progressively improved, and six weeks later he was discharged, the parents being given due precautions as to the treatment and diet, inasmuch as a trace of albumen or occasional casts were still present. It was also noteworthy that during this time the urine was much increased in quantity, being frequently over 50 or 60 ounces per diem.

Remarks.—The case presents several features of no little interest. While probably two-thirds or more of all cases of nephritis in childhood are associated with infectious diseases, and especially scarlatina, yet, as in the present instance, a small proportion have a distinctly obscure etiology. The question of diagnosis, so far as the general disease is concerned, presents in reality very little difficulty, and the similarity of symptoms to those in cerebral tumour is perhaps more striking in the present instance from the coincidence above referred to. Yet the complete absence of either œdema, dyspnœa or pallor, as well as the lack of any specific antecedent cause might all very

readily mislead; all the more so when the headache and vomiting formed so prominent a feature of the malady.

With respect to both diagnosis and treatment, the case well illustrates the importance of early retinal examination and the necessity of due regard for the condition of the urine where headaches persist without apparent cause.

It is still more difficult to decide the nature of the renal lesion, for it would seem that in children even more than in adults, one is never safe in predicting the gross appearances of a kidney unless the symptoms of the disease be most typical.

Is the present lesion to be considered as acute or chronic? To decide this absolutely would be a difficult task; certainly one would tend to believe that even though the granular kidney is extremely rare in children, the present symptoms pointed very much to that diagnosis. More especially may be mentioned the urine of low specific gravity persisting throughout the course of the disease, the markedly increased quantity when once recovery was established, the advanced albuminuric retinitis, which even under any condition is extremely rare in children, and lastly, the persistent thirst. In the light of such a diagnosis the ultimate outlook would be proportionately serious, these cases reaching a lethal termination in a much shorter period.

CASE II.

Acute nephritis ushered in with symptoms simulating appendicitis

The victim of this affection was a young man aged 26 years, whose illness was preceded by distinct exposure to cold. Following upon this was general malaise and a vague feeling of abdominal discomfort, nausea and vomiting. The bowels were constipated. On the next day the abdominal discomfort was more marked, and tenderness in the right iliac fossa pronounced.

An enema was administered, and after three hours the pain on pressure immediately outside McBurney's point was even more distinct. Palpation in this area revealed a finger-like body which was painful to pressure, and, so far as could be estimated, was the swollen appendix. The temperature was 100·5°. The pulse 96. On the next day, however, examination of the patient revealed but little tenderness in the affected area, even on deep pressure, while on the other hand the lumbar region became markedly painful. The temperature now reached 101·5°, but the general symptoms were no longer those of appendicitis, whereas the urine on examination revealed all the characters of an acute hemorrhagic nephritis. Repeated tests of

the blood serum for the Widal reaction were made, though with negative results. The patient had an uneventful though tedious convalescence to recovery.

CASE III.

Nephritis—ushering in enteric fever and remaining as a chronic affection ("Nephro-typhoid")—Widal's reaction positive.

Such cases as this are perhaps not so very uncommon, and in our own clinic we have seen within the past two years at least three instances of the kind. In two of the patients the initial symptoms were so typical of acute nephritis as to entirely mask for the first two or three days the signs of enteric fever. The present malady affected a girl of 16 years who had already passed through a severe attack of subacute nephritis two years previously, and had not been heard of till February of 1898, when she requested admission to the wards, presenting all the signs of acute renal disease, viz., dropsy of the eyelids and all extremities, pain in the back, vomiting, blurred vision, diminished quantity of urine containing blood, casts, etc., all of which symptoms supervened on exposure to cold.

The temperature was 101° and the pulse 98

The heart was not definitely enlarged, but the aortic second sound was high pitched and ringing. The arteries were not sclerosed. The urine had all the characters of an acute hemorrhagic nephritis.

Examination of the abdomen during the first two or three days revealed an enlarged spleen to percussion though the organ was not palpable owing to marked rigidity. Later on it could easily be felt, and remained enlarged for several weeks. The temperature likewise assumed a high remittent type, and Widal's test of the blood serum was then made, giving on the sixth day after admission a positive reaction.

No spots developed at any time during the course of the disease. The progress of the case so far as the enteric fever is concerned was one of uninterrupted recovery, while on the other hand the renal condition has assumed more the character of a chronic parenchymatous nephritis with secondary shrinkage.

Notes on Treatment.

UNDER THIS HEADING ARE INCLUDED BOTH ORIGINAL SUGGESTIONS AND THE ENDORSATION OF METHODS ALREADY PUBLISHED.

The Use of Douching after Parturition.

The practice of giving vaginal douches immediately after the completion of the third stage of labour and at intervals during the puerperium has been practically abandoned during recent years, except in some of the large maternity hospitals. Thus, the data collected by Jewett show that in New York, in the Maternity Hospital, the Lying-in Hospital, and the Polyclinic, in Philadelphia, in the Preston Retreat, and in Boston, in the Lying-in Hospital, vaginal douches (usually of bi-chloride) are used before and immediately after the completion of the third stage. In private practice, such men as Edgar, of New York ; Hirst, of Philadelphia ; Jewett, of Brooklyn, and Etheridge, of Chicago, do not employ ante-partum or post-partum douching except for cause. Leopold, of Dresden, collected statistics of upwards of 10,000 cases, and in two-fifths of these, where no douches were used, the fever-free puerperiums averaged 95 per cent., while in the remaining three-fifths that received douches the fever-free puerperiums averaged between 78 and 87 per cent.

Clinical experience and experimental research result in the following practical conclusions :

Ante-partum vaginal douching is not indicated unless there is evidence of abnormal vaginal secretions nor is post-partum douching called for unless intra-uterine operations have been undertaken.

D. J. Evans.

Impetigo Contagiosa.

The following method of treatment has yielded uniform good results in the dermatological clinic of the Montreal General Hospital during the last ten years or more.

The crusts of dried pus and serous exudation are picked off the patches of impetigo (in some cases it is necessary to soften them previously with a little sweet oil) and an ointment of the ammonio-chloride of mercury applied directly to the raw surface.

The strength of the ointment varies from the pure unguentum hydrargyrum ammoniatum (B. Ph.) to equal parts of this and unguentum simplex, the latter being used for very young children.

That this preparation of mercury can be used without the slightest

danger of causing irritation has been abundantly proved by a long experience of a large number of cases, and that it is also a specific in this disease the records of the hospital show, as, with few exceptions, a week or ten days effects a complete cure.

F. J. Shepherd.

Acne Vulgaris.

As an alternative form of treatment in this troublesome disease, the following can be strongly recommended.

Direct the patient to carry out the usual course of shampooing the face with water, as hot as can be borne, and some bland un-irritating soap, and then, after carefully drying the skin, to apply the following lotion once a day:

Hydrargyrum bi-chloridi.....gr. xii
Spiritus vini recti ..... ℥ vi

The effect for the first few days will be, possibly, to render the condition worse and make the part hyperæmic, but after this the lotion causes no discomfort and prevents the formation of pustules.

G. Gordon Campbell.

Dysmenorrhœa in Young Girls.

The following method of treatment will be found very serviceable for that class of cases in which the flow is ushered in by severe cramp-like pains, and in which one does not feel justified in proposing a vaginal examination or local treatment of the generative organs.

For three or four days preceding the onset of menstruation give half-drachm doses of the fluid extract of viburnum prunifolium in hot water three times a day. On the morning of the expected period give a full dose of magnesium sulphate to procure a large fluid motion of the bowels, and, if the pain comes on in spite of this, five grain doses of antipyrin repeated every two hours for three doses, if necessary, will often relieve it. Any other of the latter class of remedies can, of course, be used in place of the one named.

Arthur A. Browne.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Cardiac Hypertrophy in Arterio Sclerosis.

DR. ARTHUR HASENFELD. "Ueber die Herzhypertrophe bei Arterio Sclerose."—*Deutsches Archiv. für Klinische Medicin*, December 9th, 1897.

Dr. Hasenfeld's observations on this subject have been summarized in the following conclusions :

1. In a physiological degree one finds in the splenic, the mesenteric and in the hepatic arteries a slight increase of fibrous tissue in the intima.

2. Arteriosclerosis of the abdominal (splanchnic) vessels is very slight,—only on microscopical examination at all frequent. Marked or advanced sclerotic degeneration, on the contrary, is much rarer than in the aorta, the vessels of the extremities and of the brain.

3. The sclerotic changes are generally most advanced in the main trunk of the abdominal aorta, and decrease in the branches.

4. Arteriosclerosis leads to an hypertrophy of the left ventricle only when the abdominal system or the aorta above the diaphragm is much involved. The changes in the other vessels do not seem to exert this influence.

5. In the cases of contracted kidney examined, the whole heart segment was found hypertrophied. If at the same time the splanchnic vessels were highly sclerotic, the hypertrophy of the left ventricle predominated. The same result may be seen in extreme sclerosis of the aorta. Should the diseased kidney be found without or even with a slight degeneration of the splanchnic vessels, the whole heart would be uniformily hypertrophied.

6. Should further investigation verify the uniform hypertrophy of the whole heart segment, it would appear that the contracted kidney increased the work of both sides of the heart, and probably also the heart's activity.

Albuminuria in Life Insurance.

Brandreth Symond, A.M., M.D. "Albuminuria in Life Insurance. —*The American Journal of the Medical Sciences*, April, 1898.

Dr. Symond's position as medical examiner of the Mutual Life Insurance Company, of New York, is a pledge of authority, and his article on this subject is at once pointed and practical. Albuminuria includes only two proteids, serum-albumin and serum globulin, in solution in the urine. They are always present together. The most common cause of error is the presence of nucleo-proteid.

Dr. Symond says "he does not know of a single test which is an infallible indicator of albumin." He employs two tests in combination. Acidulation with acetic acid is followed by boiling the upper layer of the urine in the test tube. A slight opacity, when seen against a dark background, is regarded as a positive result in what the writer speaks of as his delicate test. If this test be negative it is conclusive. If a reaction does take place a few drops of nitric acid are added, and if the opacity does not disappear entirely either albumin or nucleo-proteid is present.

Dr. Symonds resorts to Heller's test to differentiate between these two. He counsels letting the urine stand for twenty or thirty minutes after the contact to make sure of the reaction. The ferrocyanide of potassium test, this examiner sometimes uses instead of boiling, but he always checks results with Heller's test.

Clinically albuminuria is divided into two classes, temporary and permanent.

The temporary cases are organic and functional.

The functional cases may be doubted, while examples of transient organic cases are afforded by acute nephritis.

Dr. Symonds divides the class termed functional into several varieties, *e.g.*:

1. The cyclical variety, those in whose urine no albumin can be found in the morning, but who later in the day pass urine containing albumin.

2. The dietetic variety, those in whom certain foods cause albumin to appear in the urine.

3. The muscular variety, those showing abuminuria after severe exercise.

Then there is the albuminuria of adolescence, the albuminuria of old age, said to be due to the irritation of concentrated urine, and that following influenza and ordinary colds.

All albuminuria is to be regarded as pathological.

The prognosis for evil in all cases is in proportion to the length of time, the continuous existence of albuminuria, the presence of tube casts, the persistence of a low specific gravity, the presence of an accentuated aortic second sound, the accompanying headache, the age of the patient, the weight of the applicant, and his habits with respect to alcoholic drink.

Dr. Symonds does not favour the suggestion that all applicants with albuminuria should be insured at an extra premium so as to secure the company against loss, for he recognizes the injustice which would thus be done to those who are the subjects of transient albuminuria.

The Relapse of Typhoid Fever.

E. Bertram Hunt. "The relapse of typhoid fever."—*The Practitioner*, March, 1898.

Dr. Hunt reports 40 per cent. of cases showing a relapse in a group of 71 cases recently treated in University College Hospital. This is very high. Two cases show double relapse, and in one three successive relapses occurred. An attempt is made in this article to establish a clearer understanding of the application of the terms "relapse," "recrudescence," and "intercurrent relapse." That confusion arises in the application of these terms all readers must admit, and Dr. Hunt's teaching is reasonable and clear, and if followed would do away with misunderstanding in this connection. The chief point is emphasized, when he says that, a relapse may occur without any interval clearly defined between the primary attack and the relapse. It is a repetition of the morbid process. This repetition produces a re-establishment of some or of all the clinical features of the case. He does not agree with Murchison and Dreschfeld who do not recognise a relapse before convalescence from the first attack is fairly established.

In support of this position he quotes 4 cases described by Irvine, 11 cases seen by Shattuck, and further remarks that Fagge, Osler, Chantemesse and others recognize that such cases are true relapses They may be termed intercurrent relapses. Of the 28 cases of relapse reviewed by Hunt, 15 occurred before the temperature reached the normal, hence 15 cases showing "intercurrent relapse." Eleven cases showed the relapse after an apyretic interval. In two cases the intercurrent relapse was followed by a period of apyrexia—and a second relapse. In this analysis a reason for the high percentage of relapses may be found—many other observers not reckoning these *intercurrent* temperature elevations as relapses.

During only one recurrent relapse was an opportunity afforded for

a post-mortem examination. This revealed both recent and old intestinal ulceration.

The average duration of intercurrent relapses was 16 days.

Those cases in which during convalescence the temperature rises and remains up for a few hours or days, should be called cases of "recrudescence" or "after fever" or "false relapse."

The average of the other eleven cases was eight days. Of the 28 cases three died.

Generally the relapses resemble the primary attack, but are milder and symptoms appear earlier.

Contrary to Maclagan's view relapses were more frequent in cases of diarrhœa; 5 only occurred with constipation, while 16 were in diarrhœal cases.

The second part of Maclagan's view, viz., that the relapse is due to an infection from the cast-off sloughs can hardly explain the relapses in the fourth week, for Dr. Hunt claims that re-infection must have taken place in the second week before the period of sloughing.

The fact that a real invasion of the intestinal and mesenteric glands by typhoid bacilli takes place is rather opposed to the explanation of the relapse by reabsorption of toxines alone.

Chantemesse, believing that the bacilli of typhoid are not promptly gotten rid of, in any case, explains relapses by a fresh growth of these, but of what causes these fresh growths we are still ignorant. They may be determined by degree of immunity induced by the primary attack.

Nervous Dyspepsia.

Dr. Th. Rosenheim. "Ueber nervöse Dyspepsie."—*Berliner Klinische Wochenschrift*, Nos. 42, 43, 44, 1897.

Dr. Rosenheim's paper on this subject, read before the International Congress at Moscow last year, contains much of interest. His conclusions found at the end of his article are thus freely translated:

1. Nervous dyspepsia is an independent type of disease according to Leube. It is principally a neurosis of sensation to be distinguished from hyperasthæsia of other forms by the continued activity of the digestive process. It resembles especially the various forms of gastritis, but only in a moderate degree.

2. The motor and secretory functions of the stomach may show in nervous dyspepsia a departure from the normal. Anacidity, subacidity, superacidity, diminished gastric juice, increased motility, and atony are frequently enough demonstrated. The state frequently changes, and these examination results are significant of the condition.

If the functional anomaly is very pronounced, and if it is chronically manifest, one generally has ground to consider that instead of nervous dyspepsia another affection is present. This, *i. e.*, some other form of disease as gastritis, or motor insufficiency, may develop during an attack of nervous dyspepsia and assume a more important aspect than the original disease.

3. Nervous dyspepsia, according to Rosenheim, is not so common a disease as is generally supposed. It appears that dyspeptic manifestations in nervous individuals have been superficially termed nervous, hence, nervous dyspepsia.

4. Nervous dyspepsia as we have defined it, is found or exists in a great majority of cases alongside of nervous symptoms, which have offered a lighter or a more pronounced clinical picture of neurasthenia, yet rarely of hysteria. That nervous dyspepsia is always only a manifestation of neurasthenia is an untenable statement. The other nervous disturbances are frequently dependent upon the stomach and disappear, if one succeeds in favourably influencing that organ.

5. In nervous dyspepsia, symptomatic treatment of the stomach may be of great service, although only a therapy which has regard to the general condition and pathogenesis is of decided importance.

W. F. Hamilton.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Cancer of the Tongue.

BUTLIN.—The Hunterian Lecture on what Operation can do for Cancer of the Tongue.

Mr. Butlin first emphasizes the importance of early operation by dividing his cases into two groups—hospital cases and private cases. The first group includes fifty-three and the second forty-nine cases. He has been able to trace all but seven, although some of them were operated upon thirteen or fourteen years ago. He finds his results to be as follows :

Hospital cases—

Died of operation	9
Lost sight of	7
Recurrence in situ	8
Affection of glands without recurrence	16
Died later, cause unknown	4
Well within three years after operation	2
Well more than three years after operation	7
Total,	53

Private cases—

Died of operation	1
Recurrence in situ	10
Affection of glands without recurrence	12
Died of other causes than cancer of tongue within three years	4
Well within three years after operation	9
Well or died of other causes more than three years after operation	13
Total,	49

The above tables illustrate the advantage of early operation, and admirably illustrate the justice of the claim which surgeons have made in regard to cancer operations, that they would be able to show better results if they had the cases earlier for operation. Cancer of

the tongue is generally noticed by educated, refined people in an early stage, and they seldom consult their medical adviser for the first time, with that extensive, foul, fungating mass, only too often seen among hospital patients. Especially is this the case where the cancer is situated at the anterior part of the border or dorsum of the tongue. Operation for cancer in this situation gives the best results.

Is removal of the entire tongue necessary in every case ?

Mr. Butlin is of the opinion that it is not, and but few can speak with greater authority. The whole tongue was removed in only one of his successful cases, whether in hospital or private practice, and not in one of the patients who are still active and free from recurrence between one and three years after operation. This is very important testimony. The operation for removal of the whole tongue is more dangerous. The patient is cruelly maimed : his speech is very defective ; he has difficulty in taking solid food ; he suffers from the collection of mucus and saliva in the mouth ; and, if his occupation depends on speech even in a moderate degree, he is forced to abandon it. The conditions which obtain here are totally different from those surrounding the question of removal of a whole or a part of the breast.

In cases where the disease is near the tip, Mr. Butlin would remove the forepart of the tongue.

Another point insisted upon is the thorough and complete removal of the lymphatic glands in all cases. The groups of glands liable to infection are the submental, submaxillary, carotid and parotid.

Whether it is better practice to remove these at the same time that the tongue is removed or a fortnight later may be a debatable question.

Obstetrics and Diseases of Infants.

UNDER THE CHARGE OF J. C. CAMERON.

The Influence of Morphia and Ether Upon Uterine Activity.

Dr. H. Hensen. "Ueber den Einfluss des Morphiums und des Aethers auf die Wehenthätigkeit des Uterus."—*Archiv. für Gynakologie*, Bd. 55, Hft. 1, S. 129.

Investigations on the influence of drugs upon uterine activity have hitherto been almost exclusively confined to chloroform and ergot. The decision of the question as to whether chloroform may or should be used in ordinary labors depends in great measure upon our being able to determine whether it has an injurious effect upon the activity of the labor-pains or not. Most recent writers claim that it has. Hensen has carried out a series of investigations upon the action of morphia and ether in Prof. Werth's wards in Kiel. A modification of Schatz's apparatus was employed, somewhat similar to that used by D hnhoff for his investigations on the action of chloroform, by Klikowitsch on nitrous oxide, and Acconci on chloroform, chloral, cocain, quinine and ergot. After a minute description of his experiments, illustrated by a number of diagrams, he draws the following conclusions:

1. Morphia in doses of 0.5 to 2 cg. ($\frac{1}{13}$ to $\frac{4}{13}$ gr.) have no effect upon the activity of the pains and abdominal pressure.

2. Ether after 1 to 2 minutes markedly weakens uterine effort, by diminishing the volume (die grösse) of the pains and lengthening the intervals.

3 After discontinuance of the ether, the uterine activity returns in to 0 minutes.

4. Abdominal pressure is suspended during ether-narcosis.

The practical bearings of these observations are evident. Döhnhoff found that uterine contractions become weaker during chloroform narcosis, and do not regain their force and efficiency for some time, even as

long as two hours. It seems, therefore, that ether has an important advantage over chloroform as an anæsthetic for obstetric operations, from the fact that uterine activity returns more quickly. Atony of the uterus in the third stage of labor not uncommonly follows prolonged chloroform anæsthesia for some obstetrical operation, and hemorrhage is the result. It would seem, therefore, that ether is safer than chloroform when the anæsthesia is likely to be prolonged, when there is fear of hemorrhage, or when there is tendency to uterine inertia.

The High Forceps Operation in Contraction of the Pelvis.

Dr. S. Tóth. "Ueber die Anwendung der hohen Zange mit besonderer Rücksicht auf das enge Becken."—*Archiv. für Gynäkologie*, Bd. 55, Hft 1, S. 12.

Dr. Tóth, who is Prof. Tauffer's assistant in the University Obstetrical Clinic at Budapest, gives a minute and careful report of the forceps operations there during the past 15 years. In 7,775 cases there were 155 forceps deliveries (1.9 per cent.): the high operation was performed 44 times, and in 34 cases attempts were made to deliver with the axis-traction forceps but without success. The high forceps operations are considered in three groups: (1) those in normal pelves, (2) those in contracted pelves, and (3) unsuccessful attempts to deliver.

Not only are full reports of the cases given, but a large number of tables have been prepared which facilitate the comparison of the cases with one another and enable some idea to be formed of the results in Budapest as compared with those obtained in other institutions.

Symphysiotomy has been done but once, and then unsuccessfully The high forceps operation seems to be pitted against version and perforation, with C. Section as a *dernier resort*. Axis-traction forceps after the models of Tarnier, Breus, Olshausen and Naegele were used. Those of Olshausen and Naegele were found to be too large and heavy: moreover, the line of traction was not in the pelvic axis in high operations. A better instrument is the Breus forceps, but the blades are harder to apply and are apt to slip: altogether it is not as safe and certain an instrument for the high operation as that of Tarnier. The Tarnier forceps have been in use since 1889 and have given entire satisfaction.

The following table is interesting, especially for purposes of comparison. It is tolerably certain that symphysiotomy would have been

done on this side of the Atlantic at least in those eight cases where unsuccessful attempts were made with forceps, and a fair proportion of the children would have been saved.

	No. of Deliveries.	Completed Operations.		Unsuccessful Attempts.	Total.
		Living Children.	Dead Children.		
In pelves with conj. diag. over 11 cm.	3	3	..	..	3
In pelves with conj. diag. 10.5 to 11 cm.	8	7	1	2	10
In pelves with conj. diag. 10.1 to 10.5 cm.	5	5	.	2	7
In pelves with conj. diag. 10. cm.	2	2	..	4	6
In pelves with conj. diag. undetermined.	6	4	2	..	6
	24	21	3	8	32

The author's conclusions are as follows:

1. The high forceps operation is not so dangerous for mother or child as it is often said to be; on the contrary, it is undeniably more favorable for both than version, especially podalic version in head presentations.

2. In all cases where the head remains high up, and labor must be terminated in the interests of the mother, and when the suitable time and conditions for version have passed, the high forceps operation should be tried in preference to perforation of the living child.

3. In all cases of pelvic contraction of the first degree (c. d. over 10.5 cm.), and even of the second degree (c. d. under 10.5 cm.) when the measurements are near the upper limit, the high forceps operation is preferable to prophylactic version, as there will be longer delay before operating, thus affording a chance for spontaneous delivery to occur. The same principle should guide us in the management of cases where undue development of the fœtus causes a relative disproportion.

4. In cases in which the high forceps operation fails, perforation should be done without further delay. In favorable conditions, symphysiotomy may be taken into consideration, but podalic version is contraindicated.

5. While the high operation may be performed with different models of forceps, provided they are long enough, the Tarnier instrument is preferable to all others for this operation.

The Effect of Amputation of the Cervix upon Pregnancy and Labor.

DR. J. L. AUDEBERT. "Etude sur la grossesse et l'accouchement après l'amputation du col."—*Annales de Gynécologie et d'Obstétrique*. Jan., 1898, p. 20.

For some time the after effects of Alexander's operation and hysteropexia have been the subject of lively discussion; but comparatively little attention has been paid to the accidents which may occur in pregnancy following a partial or total amputation of the cervix. Does Schroeder's operation, for example, alter the course of a subsequent pregnancy? Is abortion or premature labor more apt to occur? Is dilatation of the cervix rendered more difficult? The prevailing opinion seems to be that no ill effects follow amputation. Pozzi says that dilatability of the cervix is not compromised and that there is nothing to fear from sterility or dystocia. Nevertheless, cases have been observed from time to time which cast doubt upon such a favorable opinion. In 1895 Audebert had a case of severe dystocia following a Schroeder operation, and shortly afterward saw one in which abortion occurred three times in succession after amputation of the cervix. Pinard has called attention to the frequency with which abortion follows hysteropexia and operations on the cervix. Audebert has collected and reported at length 16 cases in which pregnancy has followed amputation of the cervix. He considers the influence of the operation upon (1) the duration and evolution of pregnancy, and (2) the course of labor.

These 16 women before amputation of the cervix had a total of 27 pregnancies, and after operation a total of 24 pregnancies. The results may be tabulated for comparison as follows:

	Before Amputation.	After Amputation.
Abortions (before 7th month)	2	10
Delivery before term (after 7th month)	3	9
Delivery at term	22	5
	27	24

From these figures it is evident that the tendency to abort is much increased by the operation.

In most of the cases the course of labour was regular, the uterine contractions were normal, and dilatation was effected without marked delay or unusual pain. In 4 cases there was marked dystocia.

Premature rupture of the membranes occurred 10 times in 15 confinements. This accident seems to determine the frequency of abortion and premature labour. In 4 cases of abortion there was retention of the placenta, followed by hæmorrhage and septic infection. In the 4 cases of dystocia, the presence of cicatricial tissue prevented normal dilatation. In one case, a fibro-cicatricial ring absolutely undilatable necessitated bilateral incision and forceps delivery. In another case, labour lasted 4 days, and delivery was ultimately effected by a difficult basiotripsy through a tough imperfectly dilated ring which had resisted the action of a Champetier-de-Ribes bag.

The author concludes that amptuation of the cervix exercises a marked influence.

1. Upon the *duration* of subsequent pregnancies, causing increased frequency of abortion and premature labour.

2. Upon the course of labour (*a*) by favouring premature rupture of the membranes, (*b*) by causing cicatricial contractions of the cervix, which interfere with dilatation.

With regard to treatment, precautions should be taken to prevent premature delivery. In the early months, fatigue and exertion should be avoided, and in the latter months complete repose should be enjoined, as standing and walking favour the descent of the presenting part upon the cervix and frequently lead to premature rupture of the membranes. In cases of dystocia from cicatricial rings or bands, incisions more or less deep, according to the circumstances of the case followed by forceps delivery, give the most satisfactory results.

The Intra-Uterine Use of the Champetier-de-Ribes Bag.

Dr. F. Kleinhans. "Lur intrauterinen Anwendung des Kolpeurynters."—*Monatsschrift für Geburtshülfe und Gynäkologie.*"—Feb., 1898, s. 167.

Of late years the intrauterine use of the colpeurynter for the quick and bloodless dilatation of the cervix and os uteri has become more general. The collapsed bag is introduced into the cervical canal or uterine cavity and is then distended. If it is simply allowed to remain there, it acts primarily by exciting uterine contractions and only secondarily as a dilator, its efficiency and the rapidity of its action as a dilator depending upon the force and frequency of the uterine contractions which its presence sets up. If, however, traction is made upon the bag, it acts primarily as a dilator, and the rapidity of the dilatation will depend upon the amount of tractile force applied. The author recommends colpeurysis with constant traction

(*metreurysis*) and reports 7 cases. A continuous pull is secured by attaching weights to the end of the tube by which the bag is filled, and allowing them to hang over the end of the bed. A sort of extension apparatus may be rigged up for the purpose. With regard to the question whether the amniotic sac should be ruptured or not before the introduction of the colpeurynter, the author is inclined to keep the sac unruptured as long as possible. He prefers a bag made of inelastic material, such as that of Champetier-de-Ribes, to the elastic rubber bags of Barnes and others. He concludes that intra-uterine dilatation is valuable (1) in the artificial induction of premature labor, as no other method acts so quickly and certainly, and (2) in eclampsia during pregnancy, as in no other way can delivery be effected so rapidly. For the induction of abortion, it is less useful, because the measures employed to dilate the cervix enough to permit the introduction of the bag, are generally sufficient to secure the emptying of the uterus. In pathological changes of the uterus, it should not be used, for it may convert short pains into weak ones.

J. C. Cameron.

Pharmacology and Therapeutics.

UNDER THE CHARGE OF A. D. BLACKADER.

On Anæsthesia and Anæsthetics.

WALLER, A. D. "The action of anæsthetics upon nerve: ether and chloroform."—*The British Medical Journal*, November, 1897.

In this very interesting paper, read at the Montreal meeting of the British Medical Association, Dr. Waller gives an account, illustrated by demonstrations and diagrams, of the action of anæsthetics upon nerve tissue. As the result of his observations, he concludes that the efficacy of a compound in the chloro-methane group is not so much due to the number of atoms of Cl it contains, but rather to the position of the Cl in the molecule. Chloroform, he estimates from his experiments, to be seven times as powerful as ether. Methylene (CH_2Cl_2), which is difficult to prepare and keep, and ethylene and ethyledine chlorides, he does not consider will ever hold a place in practice in preference to either ether or chloroform. The action of carbon dioxide he considers as adjuvant rather than as antagonistic to the anæsthetic effects of chloroform, and, therefore, impeded respiration is probably less dangerous at the outset than during the subsequent period of chloroform administration. He considers Lauder Brunton mistaken when he says that chloroform vapour, pure and simple, is not nearly so dangerous as chloroform vapour with carbonic acid; his own observations distinctly oppose this statement. In practice he thinks that it is not the accumulation of carbon dioxide by impeded respiration that is to be dreaded, it is the accumulation of chloroform itself. He says: "A properly anæsthetised patient is substantially a reservoir, within which it is required to maintain the chloroform or ether at some unknown optimum percentage and quantity. This percentage and the absolute quantity of chloroform or ether in his body are the resultants of the stream into his lungs and of the stream out of his lungs, and experience alone, not measurements, enables you to adjust the stream into his lungs so that the quantity within the reservoir shall not fluctuate above or below the unknown optimum value. As chloroform is seven times as powerful as ether, it is clear we require a far more voluminous ingoing stream of ether than of chloroform vapour in order to reach an optimum quantity, and it is equally

clear, that the chance of accidental fluctuation above the limits of the optimum, will be far greater in the case of chloroform than in that of ether." Considering, on the authority of Snow and Bert, that the lethal quantity of chloroform is double the full anæsthetic quantity he infers that a patient is not able to hold safely at any one moment in his body more than 2 ccm. of chloroform. An amount that can be very easily exceeded if we attempt to obstruct respiration by covering the mouth and nose with a towel holding an unknown quantity of chloroform. While Dr. Waller does not oppose the use of chloroform altogether, he expresses himself as greatly astonished that, in the face of the clinical experience of the past fifty years, chloroform, notwithstanding its superior convenience, should still be frequently employed for the purposes of minor surgery. Chloroform, he thinks, should be regarded as a dangerous reagent, only to be used on serious grounds, and not to be employed as a routine drug in all kinds of cases.

With regard to the employment of the A. C. E. mixture, Dr. Waller's position is not so clear. He states that he at first regarded it as an attenuated and rather uncertain kind of chloroform, but later on says that he does not wish at the present to commit himself too absolutely to a statement that the alcohol and ether are physiologically negligible.

Surgeon Colonel Lawrie, in replying to Dr. Waller, emphasized the necessity of maintaining the regularity of the breathing during the administration of chloroform. Should the patient struggle or hold his breath, the chloroform cap or apparatus must at once be removed from the face so as to prevent the smallest possibility of his gasping in an overdose.

GARDNER, BELLAMY. "The continued administration of nitrous oxide gas and oxygen during minor surgical operations."—*The Lancet*, June 12, 1897.

KEMP, GEORGE T. "Nitrous Oxide Anæsthesia."—*The British Medical Journal*, November 20, 1897.

PATERSON, HERBERT, J. "On the use of nitrous oxide gas for prolonged operations."—*The British Medical Journal*, January 22, 1898.

The view has long been held and widely taught that nitrous oxide produced anæsthesia simply by depriving the patient of oxygen. After the careful experiments by Dr. Kemp there would appear to be no escape from the conclusion that nitrous oxide is a true anæsthetic, and that it produces anæsthesia apart from depriving the animal of oxygen, and differs from nitrogen, which does not appear to possess any true anæsthetic properties.

Mr. Gardner, in a previous paper, called attention to the value of a mixture of nitrous oxide gas with 10 or 15 per cent. of oxygen for many of the operations of minor surgery, asserting that deep and even anæthesia can be maintained for a sufficient length of time to perform small operations, such as the opening and scraping out of an abscess, the removal of post-nasal adenoid growths, the movement of stiff joints and breaking down of adhesions. In one instance he administered his mixture during an operation, lasting fourteen minutes, for excision of a varicocele.

Paterson states that during the past two years he has frequently administered nitrous oxide gas and air, and also gas mixed with oxygen, in preference to ether for long operations with, in most cases, satisfactory results. The long prevalent idea that it is dangerous or injurious to prolong nitrous oxide anæsthesia is not, he thinks, supported by facts. He says that he has given pure gas with occasional breaths of air for periods of over ten minutes in nearly 200 cases, the longest administration in the series lasting fifty minutes, without the occurrence of any disquieting symptoms. The patients recover quickly and no bad after effects ensue. Nitrous oxide mixed with oxygen proved, however, a much superior anæsthetic. This latter mixture he has employed in 150 cases, maintaining anæsthesia for periods varying from 15 to 65 minutes during operations for radical cure of hernia, Symes amputation, trephining of long bones, &c. Absolutely quiet anæsthesia was not always obtained, but Paterson thinks that with more experience it might be. All persons are not equally good subjects. Heavy smokers and heavy drinkers often struggle violently at first, but after four or five minutes settle down and take it fairly well. Children as a rule take it well. The youngest patient to whom he administered it was under two years, and even anæsthesia was maintained for fifteen minutes. Dr. Paterson regards the mixture as by far our safest anæsthetic, meriting an extended trial both in minor and major operations.

Silk, Fred. W. "On the diagnosis and treatment of the early stages of over-narcosis during anæsthesia."—*Treatment*, January 27, 1898.

Unfortunately there is no means of ensuring absolute safety during the administration of anæsthetics, but in proportion as we are vigilant, adopt proper prophylactic measures, and are judicious in the selection of the anæsthetic, the risks are diminished. From a clinical standpoint a practical and simple classification of the symptoms of over-narcosis would be as follows:

1. Over stimulation, occasionally met with during administration of ether in fat or emphysematous patients especially if much blood is being lost. The earliest indications are rapid, shallow, noisy breathing; quick, feeble pulse; dilated pupils; rapid accumulation of mucus with consequent lividity, which may become very intense. The condition may arise as an after effect.

2. Symptoms in which *cardiac failure* is the most prominent feature. Seen most frequently in the earlier stages and in young anæmic people. The earliest indications are pallor, the pulse gradually becoming imperceptible, the pupils slowly dilating, and the respirations unaltered at first, but gradually failing. It is not easy to distinguish this condition from one of superficial anæsthesia, in which the symptoms are premonitory of vomiting: in these latter cases, however, the respirations are seldom absolutely abolished, though they may become very faint; the occurrence of retching, too, will satisfy us that we have not to deal with a case of over-narcosis.

3. Symptoms in which *respiratory failure* is the most prominent symptom. A condition of the mid-stages of anæsthesia. Respirations early affected, feeble and shallow; pallor, and often slight lividity of the ashy-grey type; pulse only falling slowly; pupils gradually dilating. This may end in a condition not distinguishable from the following.

4. Sudden over-narcosis. Simultaneous, or almost simultaneous, cardiac and respiratory failure; more or less lividity; rapid and extreme dilation of the pupil; facies hippocratica.

In over stimulation we have to deal with a condition sharply separated from the three following. In this condition if simple withdrawal of the anæsthetic has little effect, it is necessary at once to secure patency of the air way, by raising the jaw, opening the mouth and pulling forward the tongue. The mucus should be removed by means of soft sponges. The patient should be turned on his right side, and if there is much lividity oxygen should be administered. After the patient has been put back to bed the nurse or attendant should not leave the bedside for some time.

In all cases which come or seem likely to come under any of the other divisions, the routine to be recommended is as follows:

(*a*) Secure a free air-way by turning the head well to one side, pushing forward the lower jaw, opening the mouth, pulling forward the tongue, passing the finger to the back of the throat and raising the epiglottis and base of the tongue: if necessary, mucus, etc., must be removed with sponges.

(*b*) If there is no response to these measures, the next thing to be

done is to press gently but firmly on the chest wall once or twice at a few seconds interval : may be it is only the rhythm of respiration that is in abeyance.

(*c*) Gently invert, or partly invert the patient by drawing the head well over the end of the bed and raising the feet. In children the inversion may be complete by holding them up by the heels. While this is being done a little water may be dashed over the face, or the bare chest may be flicked with a wet towel, but this must not be done too energetically.

(*d*) Artificial respiration may now be tried—if possible by a combination of Sylvester's and Howard's methods—and must be persevered in for some time.

Cases of over-narcosis that are recoverable will usually show indications in that direction under the treatment above suggested ; but should they not do so, and as adjuncts to this treatment, the following plans may be given a trial. It must be distinctly understood, however, that these methods are recommended merely as adjuncts, and are not to be employed in lieu of the routine treatment :

(*e*) Inhalation of nitrite of amyl, or, better, of oxygen.

(*f*) Hypodermic injections of strychnine and digitaline if the case is diagnosed early, but if the pulse at the wrist has entirely disappeared it cannot be expected that the drugs will be absorbed. The hypodermic use of ether, alcohol, etc., is irrational and of doubtful value.

(*g*) Electrical stimulation of the cardiac area ; of the diaphragm and of the phrenic nerves ; and of the pneumogastric nerves in the neck.

(*h*) Rectal infusions of normal salt solution, or intravenous injections of the same

(*i*) As a last resource, acu-puncture or galvano-puncture of the heart itself has been recommended ; it has even been suggested that pressure should be applied to the heart, through an opening made along the left margin of the ribs, or into the pericardium. I am not aware, however, that this latter suggestion has ever been put into practice.

In conclusion, it must be pointed out that patients who have suffered from over-narcosis are particularly liable to relapse, and should be carefully watched for some hours.

The Treatment of Senile Gangrene.

Jones, Thomas. " On the treatment of senile gangrene."—*The Medical Chronicle*, January, 1898.

After referring to the fact that this disease is not necessarily confined to the advanced period of life, but may be met with at any time after 40 years of age, in cases where we have marked degenerative changes in the arterial coats, the writer describes as important premonitory symptoms persistent coldness of the feet, and perverted sensations, especially crampy pains in the calf. On the occurrence in such class of patients of these symptoms, everything calculated to further depress the vitality of the tissues is to be avoided. The insufficiency of the blood supply is to be met by the artificial maintenance of the local temperature and any breach of surface is to have careful attention.

In those cases in which the gangrenous process has actually set in the indications are to circumscribe the disease and minimize its effects. The skin of the foot and leg are to be thoroughly cleaned, adopting the same antiseptic measures as if about to submit the part to operation. The immediate vicinity of the dead part is to be freely dusted with iodoform and covered with sublimate or salicylic wool, the whole being kept in position by a flannel bandage, carefully and evenly, but not too tightly applied.

Should any discharge exist, the dressings on this part should be renewed every or every other day. The parts should be kept as dry as possible, and no moist warm applications should be permitted. Pain has to be met by the internal administration of opium. Locally a powder composed of boric acid, bismuth and morphia, may be applied with benefit at the junction of the dead or living tissues.

In some cases the pain is so severe and persistent that the only remedy is removal of the limb. While amputation anywhere in the vicinity of the gangrenous part is useless, and the result disastrous, amputation above the knee-joint may be more successful. The writer lays down the following rules. (1) When the gangrene is limited to one or two toes, and the patient's condition is, and remains satisfactory, be content with the local treatment described. (2) When the gangrene has reached the metatarsus, be prepared to carry out amputation above the knee, or in rare and favourable cases through the knee-joint itself.

Delayed Resolution in Pneumonia.

STENGEL, ALFRED. "Delayed Resolution in Pneumonia, and its Treatment."—*Therapeutic Gazette,* February 15th, 1898.

We are all of us too prone to regard the resolution of the lung as concomitant with defervescence. In typical cases of croupus pneumonia the temperature declines before the processes of resolution have begun, or at least before they have made any considerable pro-

gress. Pathologically speaking, resolution may fail on account of untoward changes in the diseased area, or because of mere delay in the ordinary processes. In the former instance the disease may terminate in abscess or necrosis of the lung or in interstitial pneumonia; in the latter, after a more or less tedious course, complete resolution finally takes place. The writer, while he believes it possible that these long delayed cases may be wholly normal in their histological course, is convinced that in most instances there is at least some interstitial thickening of the septa and connective tissues generally, which causes the greater delay in resolution. Delay occurs more frequently in irregular pneumonic conditions, especially in such as are characterized by proliferative cellular processes. Instances of this kind are met with among the pneumonias complicating infectious diseases, and Bright's disease, and in secondary pneumonias following embolism. Other cases occur in the aged, and in persons reduced greatly in vitality. The causes of delay in resolution in such cases no doubt vary in different individuals. Massive exudates are probably more difficult to absorb than moderate ones. Weakness of the respiratory movements, and an enfeebled circulation are probably contributory conditions. In the treatment we should endeavour to recognize the several causes. The writer has, however, seen little benefit from the various tonics, stimulants and alteratives recommended by various authorities. Counter-irritation has, however, appeared to be of benefit in every case in which the writer made use of it, and the benefit was generally in proportion to the severity of the application. Next to counter-irritation the writer ranks systematic breathing exercises either in the form of deep inspirations and expirations, or of exercises with bottles after the method suggested by James for the treatment of cases of empyæma after evacuation. In cases of moderate consolidation or persistent broncho-vesicular breathing after pneumonia, the writer relies upon breathing exercises rather than upon counter-irritation; but in cases of marked consolidation these breathing exercises might tend to exhaust the patient, and if there was great lack of expansion on the affected side they would prove of little service.

A. D. Blackader.

Pediatrics.

UNDER THE CHARGE OF A. D. BLACKADER.

Chorea Minor.

WEIR MITCHELL, S., AND RHEIN. "A clinical re-examination of the motor symptoms of chorea."

GUTHRIE, LEONARD. "The varieties of ordinary chorea in children and their treatment."—*Treatment*, March 10, 1898.

Ever since the days of Sydenham, the general profession has been deeply interested in the etiology and treatment of this comparatively common disorder. Its association with rheumatism appears to have been clearly recognized by the physicians of Guy's Hospital during the early decade of this century, and Bright directed particular attention to this subject. Since then the relationship has been the subject of much investigation and discussion, without eliciting any very definite results, beyond the fact that between 40 and 50 per cent. of all choreic cases present a distinct rheumatic history; the percentage varying according to what symptoms the observer at the time may choose to recognize as a manifestation of rheumatism. The majority of recent writers emphasize the fact of the close connection between the two diseases. The occurrence of chorea following fright or emotional disturbance is at first difficult to reconcile with a rheumatic origin of the disease, but the effects of chill and emotional shock are practically the same. Both produce altered conditions of circulation lowered vitality, and probably disordered metabolism; conditions which may favour the action, or limit the elimination, of the rheumatic toxines, whatever they may be. A single exposure to wet or cold may determine an attack of rheumatic fever in some, whilst in others repeated and prolonged exposure may be required. So a sudden shock or fright may produce change in some cases, whilst in others it is only developed after long periods of emotional disturbances, such as over pressure in school.

As regards the choreic manifestations very little attempt has, up to the present, been made to study them carefully, and even recent text-books have added little to the vivid description of this disorder originally given by Sydenham. In his Lectures on the Nervous System as long ago as 1881, Dr. Weir Mitchell pointed out that this

description was imperfect, and that the symptoms, as manifested in different cases, admitted of some classification. Working out the suggestions which were made then, Dr. Mitchell and Dr. Rhein have made a study of the motor manifestations in the cases which came under their care, and found that there is a striking diversity. Accordingly they divide cases of this disease into five groups :

1. Cases in which during voluntary muscular inaction, choreiform movements are almost continuous, but in which these movements disappear entirely when muscular acts are performed. This appears to be a phenomenon quite beyond the influence of the will, and suggests that inhibition for the time is increased.

2. Cases in which choreiform movements are continuous during rest, but become greatly increased with intentional effort. It is impossible for one suffering from this variety of the malady to complete satisfactorily any voluntary muscular act.

3. Cases in which choreic manifestations only become evident on attempts to perform a muscular act. The hands at rest move, if at all, only slightly, and at rare intervals, but on attempting to use them, the twitchings become sufficiently active to prevent, or greatly to interfere with, the performance of the act. These cases are comparatively rare. So also are the next class.

4. Cases in which the movements, continuous during rest, are but slightly altered by the tests employed.

5. There are also cases which present during their course at different times, more than one of the types described.

Beyond the clinical interest attaching to this classification the writers do not for the present claim any special significance for it.

Dr. Guthrie, in his paper, while recognizing the valuable clinical facts underlying the observations of Dr. Weir Mitchell and Dr. Rhein, thinks a more serviceable classification can be made by arranging the cases in groups which, when recognised, will in themselves afford indications for treatment.

He would divide all cases of chorea into two main classes : (1) Sthenic, or explosive, in which the predominating character of the symptoms is violence, and wide range of movements. (2) Asthenic, or pseudo-paralytic, in which the movements are feeble in character, and the patient appears to have some loss of muscular power, or of will power, to execute voluntary movements. These two main groups may be further subdivided into severe and mild forms.

The severe form of the sthenic class is characterized by constant violent, irregular, jerking movements of the whole body during rest, and by exaggeration of the movements on attempted voluntary action

The patient is never still for a moment, except during deep sleep : and sleep may be prevented, or disturbed (when not profound), by involuntary movements. Facial contortions are pronounced, and form an admirable physiological study of the expression of emotions. The expressions of gladness, sorrow, pain, pleasure, disgust, fright, contentment, etc., follow each other in rapid succession, and one fades into the other as in a dissolving view. Opposite expressions may occur simultaneously in different parts of the face.

The movements of the hands and arms are elaborate, but are only half performed and contradictory. Speech is not usually lost. There may be irritability and fretfulness, but mental symptoms are not generally pronounced. In these cases there is, apparently, an excitability of motor centres, with complete absence of inhibitory control.

In the milder varieties of this form, movements are still the prominent feature, but they may be facial only, or hemiplegic or monoplegic in character. In the most favourable cases for treatment the movements chiefly occur when notice is taken of the patient. He can often perform acts requiring manual dexterity so long as he is not watched ; or, as in Weir-Mitchel's first type of cases, movements continue when the patient is at rest, but there is no inco-ordination when acts requiring delicate muscular effort are performed. In these, the power of inhibitory control is in abeyance, but can be called forth by an effort of volition. The milder types may mark the onset or the decline of the disease. Sometimes they are combined in the same patient. Sometimes one of the milder types prevails throughout.

In severe cases of the asthenic, or pseudo-paralytic class, the patients are usually emaciated and prostrate. They lose all power of voluntary movements, and attempts to execute such only result in slight twists or shrugs of the whole body. There are no facial contortions, but the expression is wild or imbecile. They cannot protrude the tongue, and cannot speak (dumb chorea). There is often difficulty in feeding them. Mania or dementia is not uncommon. Acute endocarditis or pericarditis perhaps occurs more frequently in this class of case than in the former, in which the shifting murmurs commonly heard seem to be functional, or due to chorea of the heart muscle itself. These cases are usually protracted and difficult to treat. In the milder forms movements are again less in evidence than in the sthenic cases. They have been rarely observed by the patient's relatives or friends. The children are usually supposed to be paralyzed : commonly in one arm, which hangs limp and flaccid at the side. The child makes no voluntary effort to use it, and when pressed to do so, the movements are feeble and abortive. In the asthenic group of cases

there seems to be inhibition of movement, rather than want of inhibitory control. There is not the hyperexcitability of the motor centres which marks the sthenic variety.

As in the sthenic group, the types of the asthenic may pass into each other. Whether the asthenic type ever passes into the sthenic, I am unable to say, but the sthenic often becomes asthenic in character.

In the treatment of severe sthenic cases in which there is great excitability of motor centres, with entire absence of inhibitory control, absolute confinement to bed is essential. The bed should have padded sides, in order to prevent the patient from hurting himself or falling out. *Chloral hydrate* is a very valuable remedy in such cases. It must be given until natural sleep is procured. Sometimes five-grain doses, thrice daily, are sufficient for a child of five or six, but it is usually necessary to increase the dose and to give it every four hours in order to get the patient fully under its influence. Ten to fifteen grains may thus be given to a child aged eight or ten. The pulse and heart should be carefully watched meanwhile, and, if they show signs of failure, brandy and digitalis strophanthus, or caffein, should be given. The tincture of cactus grandiflorus, in doses of two or three minims, is useful when there is much cardiac disturbance or feebleness without definite sign of endocarditis. In very severe cases, in which even chloral hydrate fails to produce rest and sleep, inhalations of chloroform may be necessary.

In milder sthenic cases, other nerve sedatives are of use. *Antipyrin*, in doses of three to five grains for a child aged between five and eight is often very efficacious; so also is *monobromide of camphor*—one to four grains three times daily, with liquorice powder. Extract of calabar bean, one-twentieth grain to one-sixth grain, with extract of indian hemp, one-third grain to one-half grain have been used with good effect. They may be made up with glycerine and peppermint water.

Two of the sub-varieties of the sthenic form require some consideration. (*a*) Cases which, after being confined to bed for some weeks, cease to improve. Sometimes the movements continue whilst the patient is at rest, and cease when voluntary action is attempted (Weir Mitchell, Group I.) This is an indication for encouraging voluntary movements, by getting the patients out of bed and allowing them to go about. They then often speedily improve. (*b*) Sometimes the movements occur only when the child is being watched whilst at rest, and when it attempts actions requiring manual dexterity, under supervision. These children are usually timid, self-conscious little creatures. They gain confidence if patiently encouraged to use their muscles, and

soon lose their ataxy. Simple drill exercises can easily be invented to meet the case. Drill exercises are also of use when the ataxy only occurs on voluntary movements, whether the child is being watched or not.

Those cases of chorea in which there are merely tricks of habit —grimaces, facial contortions, sniffing, snorting or grunting noises— provided that no local cause of irritation exists, are best treated by moral suasion. They are, however, often signs of derangement of general health.

In the treatment of the asthenic, or pseudo-paralytic, class of cases it is to be remembered that in these there is little evidence of undue excitability of the motor areas, but rather of an increased inhibition of movement, or of a deficient will power. In these cases it is notable that symptoms, such as dementia or mania, implying disorder of the highest cerebral centres, are liable to occur. In severe cases the important indication is the profound general exhaustion, for which the treatment should be recuperative and stimulant, rather than sedative. Absolute rest in bed is essential with abundance of nutritious food and general massage. Stimulants should be used freely at first, reducing the amount as soon as improvement commences. Quinine and nux vomica are often serviceable, whereas in sthenic cases quinine seems to exaggerate the condition, as it often does in epilepsy.

Arsenic, in small doses, is, I think, valuable as a general nerve tonic in all forms of chorea, but cannot be regarded as a specific cure for the disease. When given in gradually increased doses, it usually deranges the stomach for a time, and its use has to be discontinued. Several instances of arsenical neuritis, after the use of arsenic in large doses, have recently been recorded.

Partial dementia is not uncommon, and sometimes there may be acute mania accompanied by attacks of violent and prolonged screaming. In true mania with these symptoms, chloral and bromide are indicated, but the symptoms may be due to a curious moral perversion which also sometimes occurs in children recovering from long and exhausting illness, such as typhoid fever. This may require appropriate treatment.

Milder cases of the asthenic variety, like those more severe, need treatment by tonics, good food, rest in bed, and massage. After a time, exercises for the affected limbs should be prescribed. Salicylate of quinine, when there are muscular pains, and cod liver oil with maltine and iron, when anæmia is present, are better remedies than bromides and sedatives.[1]

True endocarditis (as distinguished from the functional and temporary disturbance frequently met with) and pericarditis occur oftener in asthenic than in sthenic cases. Their treatment should be on the usual principles. It is important, however, to remember that maniacal screaming and delirium are often associated with pericarditis, and that treatment should be directed to the cardiac, rather than to the cerebral symptoms.

Finally, the close association between chorea and rheumatism is to be remembered, and a patient who has once suffered from chorea should always be treated as a rheumatic subject.

A. D. Blackader.

Gynæcology.

Ectopic Gestation.

Swain, Paul, F.R.C.S. "Ectopic Gestation."—*Edinburgh Medical Journal*, January, 1898.

Worrall, Ralph, M.D. "Cases of Ectopic Gestation." – *British Gynæcol. Journal*, November, 1897.

Swain considers that, in the healthy Fallopian tube, the cilia propel the ovum towards the uterus and obstruct the advance of the spermatozoa along the tube. If these cilia are destroyed the ovum is very liable to remain in the tube and become impregnated in this situation, where it proceeds to grow. Primarily, all ectopic gestations beginning in the tube may be interstitial, tubo-ovarian or "Fallopian," *i. e.*, between the two former. He wisely does not believe in the existence of a true ovarian pregnancy, although one would infer from his remarks that he considers primary abdominal pregnancy to be met with now and then, whereas it is well known that the placenta could not become attached to and be nourished by the peritoneum.

The diagnosis is difficult, for the first few weeks the usual signs and symptoms of intra-uterine pregnancy often occur. Then sudden severe pelvic pain, probably accompanied by faintness, is felt, similar attacks recurring every now and then, especially after any exertion. He makes no mention of the dull, aching pain caused in the early stage by the gradual distension of the tube by the growing ovum. The patient also complains of irregular discharges of blood, and often shreds of tissue from the uterus. Vaginal examination reveals the uterus to be more or less enlarged, and that a boggy mass lies posterior to it. He does not think that ectopic gestation can be diagnosed before rupture, but this is not the case. While one often is unable to diagnose accurately the condition, yet, where you have no history of a previous acute pelvic trouble, and the patient complains of irregular discharges of blood from the genitals and a dull, aching pain in one side, and, on making a local examination, you find the tube on that side to be distended, you can be fairly sure that that tube contains an impregnated ovum. He does not approve of the expectant methods of treatment where primary rupture has taken place, but advocates removal of the tube, although he discusses the

use of electricity. Operation is still more imperatively called for where the rupture has taken place into the peritoneal cavity, and intravenous injection of salines after or during the operation often are of the greatest service.

Dr. Warrall relates four interesting cases, agreeing in the main with the above writer, but thinks that diagnosis before rupture is quite possible.

In the most serious cases no swelling will be felt, as the blood has escaped free into the peritoneal cavity, the treatment here being immediate abdominal section, washing out the abdominal cavity very thoroughly with saline solution after removal of the ruptured tube. Where, however, the rupture has taken place into the tissue between the layers of the broad ligament, you will make out the presence of a mass. Here nothing but rest and opium are required, according to Warrall. This is true in the majority of cases, but such patients should be very carefully watched, and the tube removed at once if the mass continues to enlarge.

Treatment of Pruritus Vulvæ.

Robinson, Dr., G. D. "Pruritus Vulvæ."—*Treatment*, January 13th, 1898.

In this extremely troublesome affection an effort should be made to get the patient's general health into as good a state as possible, careful attention being paid to the bowels. As regards medicine, twenty grains of calcium chloride given internally several times daily often give a good result.

The first requisite in local treatment is to keep the parts free from irritating discharges, for which purpose the free use of antiseptic douches, *e. g.*, sublimate 1—3000—5000 or carbolic acid 1—60, is highly recommended. This may be aided by placing a dry plug of absorbent cotton just within the vulva, to arrest the discharge before it reaches the sensitive parts. For syphilitic ulcers, a powder consisting of equal parts of calomel and oxide of zinc will be found to be very healing, especially if the parts be first carefully bathed with black wash.

Where diabetes is the cause the vulva should be well douched after each act of micturition, and then smeared with some simple ointment.

If the condition is not very chronic, an ointment of cocaine or eucaine will be found to give great relief.

As a last resource, the sensitive parts may be removed by operation, but, fortunately, this is not often required.

Uterine Displacements.

FOTHERGILL, DR. "Uterine Flexions and Versions."—*British Medical Journal*, January 15th, 1898.

ASHTON, W. E., M.D. "Displacements of the Uterus from the standpoint of treatment." etc.—*Amer. Gynæcol. & Obstet. Jour.*, January, 1898.

MARTIN, F. H., M.D. "A new operation for ventral fixations of the Uterus."—*Amer. Gynæcol. & Obstet. Jour.*, February, 1898.

Fothergill states that both flexions and versions often exist without giving rise to any symptoms or interfering in any way with the process of reproduction. Where the symptoms date from puberty, the displacement may be said to be congenital. In such cases, where the symptoms of pelvic trouble have been set up by some accident of reproductive life, the displacement itself will not require treatment. Where, however, the displacement is only discovered after some such accident, the malposition will probably be found to be due to some sequela which should be sought out and cured, such as a pelvic peritonitis, causing adhesions which drag the uterus out of place. Retroversion is one of the earliest signs of uterine prolapse, the cause of which should be sought for and treated. To sum up, in all cases of "distortion or displacement of the uterus, the pathology should be carefully thought out before, as was sometimes done, proceeding to rectify the condition by the introduction of a pessary or by any of the fashionable operative measures."

In Ashton's paper the same stress is very properly laid upon searching for the cause of a displacement before proceeding to treat the condition, and gives the following classification of displacements founded upon the form of treatment to be adopted :

Firstly, where the uterus is displaced as a whole, except in the case of prolapse, the displacement is of secondary importance, as it is caused by adhesions pulling or tumours pushing the organ out of position.

Secondly, where there is a uterine flexion or version the condition is a primary one, and should be treated as such. An exception is made, however, in the case of lateral deviations, which are usually secondary to adhesions or tumours.

Thirdly, inversion of the uterus is of primary importance. This classification is both incorrect and unnecessary. Its want of accuracy is best shown by the frequency with which we meet a case of retroversion of the uterus caused by a small fibroid of the posterior wall.

Then again, prolapse of the uterus frequently follows laceration of the perineum, and, in order to cure the prolapse, it is just as necessary to repair the perineum as it is to remove a tumour in order to cure what the writer terms a secondary displacement, for, just as the tumour is keeping up the displacement in the one case, so is the relaxed condition of the vaginal outlet depriving the uterus of its proper support in the other.

In recent primary posterior displacements, *i. e.*, those in existence for less than twelve months, much can be done to cure the condition by attending to the soft parts and introducing a Hodge's or Smith's pessary. He reduces the size of the uterus and stimulates the uterine ligaments by hot vaginal douches and ichthyol tampons. At the same time attention should be paid to the patient's general condition. This treatment should be persevered in for a year, and then, if not cured, the condition should be treated as a chronic case, for which operative measures will be necessary. Of these, the best is undoubtedly ventro-fixation, as, if properly performed, it gives the best results in every way, and will not interfere with gestation. In this operation, he suggests passing the first three sutures, which are to close the wound, through the peritoneum, so as to prevent its being stripped off from the abdominal wall. This, I think, is quite unnecessary, as the intra-abdominal pressure will prevent any extensive separation, and, in addition to this, you run the risk of infecting the peritoneal cavity on removing the sutures.

The operation of ventro-fixation, as performed by Fowler, consists in separating the urachus and a strip of peritoneum from the abdominal wall and dividing it at its lower end. Cleveland's suture carrier is passed beneath the peritoneum covering the fundus, and the free end of the urachus is drawn through and fastened in its old position by being included in the lower three or four abdominal sutures.

Dr. Martin, of Chicago, has modified this operation by not including the urachus in the strip of peritoneum which he carries beneath the peritoneum of the fundus in an antero-posterior direction by means of Cleveland's suture carrier, and fastens just as Fowler does the urachus. Temporary catgut sutures are passed through muscle, fascia and peritoneum of each side and through the fundus, to help keep the latter in position until the strip of peritoneum has become firmly united to the surrounding parts. The wound is eventually closed by through and through silkworm gut sutures.

Neither of these operations possess any advantage over the older and well tested methods of ventral fixation by means of buried silk

or silkworm gut sutures. The chief objection to Fowler's operation is that it cannot be performed on women during their reproductive life, as the urachus will not allow the uterus to develope properly during gestation, and if, as I think Dr. Fowler himself admits, the buried suture is preferable where there is liability to pregnancy, when it will be dragged upon and irritated by the enlarging uterus, surely it is the method to select when, once it is inserted, the suture will have nothing to disturb it, as will be the case in women who have passed the climacteric, whether this be artificial or natural. Another objection to both is that it takes a longer time to dissect up the peritoneum, etc., than to simply pass the suture; of the two, Martin's is the best operation, as it allows of more freedom of movement of the uterus, but it is doubtful if the single layer of peritoneum which holds the uterus in place will stand the tension exerted by the growing pregnant uterus as well as the two layers which are drawn down to form the suspensory ligament when the buried suture is employed.

F. A. L. Lockhart.

Reviews and Notices of Books.

Pathological Technique; A Practical Manual for the Pathological Laboratory. By F. B. Mallory, A. M., M. D., Assistant Professor of Pathology, Harvard University, and J. H. Wright, A. M., M. D., Instructor in Pathology, Harvard University. pp. 397, 105 illustrations. Philadelphia, W. B. Saunders. 1897.

It is no excessive praise to say that Dr. Mallory and Dr. Wright have produced a book which is the best of its kind, and which is certain to be in constant use as a work of reference in every Pathological Laboratory on this continent, and in English-speaking lands. There have been published excellent works upon post-mortem methods by Virchow, Chiari and others; excellent and practical handbooks upon bacteriological methods by Abbott and Kanthack and Drysdale; Von Kahlden, Lee and Israel have given us invaluable text-books on histological methods; Von Jaksch, Lenhartz and Simon, to mention but a few names, have written first-class works upon the laboratory methods of clinical diagnosis,—but until this book of Mallory and Wright appeared, there was no one book bearing upon the whole practice of the Pathological Laboratory, and more especially upon the work of a pathological laboratory attached to a hospital.

While we fancy that the volume before us will be found most serviceable as a work of reference in the laboratory, it will also be invaluable for the senior student. As the authors state in their preface, it is hoped that their method of presenting the subject will bring the student to realise that the mechanical performance of the post-mortem examination, and the inspection of coarse lesions, constitute only the beginning of the solution of the problem or problems presented by each autopsy, which should be investigated bacteriologically, histologically and chemically, as far as our present knowledge will permit; to realise also, we should add, that during life the same methods must be applied to the study of each case—so far as the excretions and morbid products are obtainable.

In the presentation of the different subjects, the authors most advantageously have made no endeavour to give an extensive collection of methods and formulæ, but have selected those which have been found of greatest service in practical work. With their experience in the Boston laboratories, and with their known reputation in the study and development of methods, what they have written may, with very rare exceptions, be regarded as the best and a most thoroughly reliable. Altogether we cordially congratulate the Harvard Pathological School for having produced a work so valuable, and, in fact, indispensable. J. G. A.

A Manual of Pathology, including Bacteriology, the Technique of Post-Mortems and Methods of Pathologic Research. By W. M. Late Coplin, M. D. Professor of Pathology and Bacteriology, Jefferson Medical College, Philadelphia. 638 pp.; 268 illustrations. Philadelphia: P. Blakiston, Son & Co.; 1897.

This is a clear and well written smaller Manual of Pathology, which should be useful for instructing the student in the elements of post-mortem examinations, clinical pathology, general pathology, bacteriology, and the special pathology of the various organs. But, from this statement of the amount of material compressed in the work, it will be evident that in six hundred pages of relatively large type, it is impossible that there should be anything more than the briefest consideration of the various departments of the subject: and nowadays, when these various subjects form separate courses in our Universities, and when there are in connection with most of the branches of pathology already existing excellent handbooks, it is a little questionable whether it is wise to recommend a work of this nature to the student. In clinical pathology alone much more is needed nowadays than is embraced in Dr. Coplin's very clear description of the examination of the blood and urine; while in general pathology, if the course is to be of any use in the training of the student to appreciate the main morbid processes, what is requisite is not merely a series of definitions and descriptions of those processes, but such a discussion concerning the nature and origin of the same as will make him approach a case with a fuller appreciation of the causation and of the relationship of the symptoms represented by that case.

Yet, granting all this, it must be admitted freely that Dr. Coplin has succeeded in placing in a clear and not uninteresting manner that portion of pathology which is the framework of our knowledge of the subject, and without hesitation we can recommend it as being better than any other work with which we are acquainted of the same size and scope.

J. G. A.

Transactions of the American Microscopical Society. Vol. XIX. Buffalo; 1897.

These transactions form a well printed and illustrated volume of 200 pages, and give the papers read before the Association at the meeting in Toledo during last August. The microscope is so all-important an instrument nowadays in so many sciences that, as will be understood, the range of the papers here included is singularly wide, varying from the micro structural characteristics of steel and the light thrown by the microscope in geological darkness, through the rotifera of Sandusky Bay, to the phagocytic action of leucocytes, and the comparative study of hair, from the medico-legal point of view. It will be understood, therefore, that many of these papers have no direct interest for medical readers; on the other hand, we are not a little impressed with the amount of interesting

matter contained in this volume. Thus, Mr. J. C. Smith's article upon the development of Spores in the Amœba Villosa, incomplete in some respects, is in the highest degree interesting, as showing the relationship of the amœba to the sporozoa. We were ignorant until this paper appeared that the encystment of amœba might be followed by the development of spores, which, upon rupture of the capsule, are liberated as flagellated bodies. In this observation we have an indication that the amœba, such as we get in dysentery, and the sporozoa, such as we have in malaria and some other diseases, may not be so far apart as one has been apt to consider them.

Mr. J. M. Berry's article upon the Phagocytic Action of Leucocytes in Amphibia and Mammalia brings out the curious point that, both in amphibia and in the lower animals, finely divided carbon (lamp black) introduced into the jugular vein, is to be found a few days later in great abundance in the peritoneal cavity, either free or more often enclosed in leucocytes. So constantly did Mr. Berry obtain these results that one is led to consider that very possibly, under ordinary conditions, the large serous cavities of the body may become a point of discharge for not a few substances taken up by the wandering cells of the system. In this case the carbon must clearly have been taken up by the leucocytes in the blood, which, then, must have wandered out of the vessels into the lymph spaces, and so into the serous cavities. Mr. Berry, however, would appear to be ignorant of much of the work that has been done by Welch and others upon the transfer of pigment (in cases of Anthracosis, etc.,) to distant organs, and its deposit there. He runs down previous important studies in a way rather characteristic of an immature worker; while his English or want of English is occasionally irritating. An "ingested leucocyte," for example, can only mean a leucocyte that has been taken up and englobed by something else, not as he uses the term,—a leucocyte which has ingested and taken in foreign particles.

Dr. W. G. Reynolds' paper on the Comparative Study of Hair is valuable for reference, being accompanied as it is by neat illustrations of the hair of close upon twenty different animals.

Lastly, Dr. A. E. Loveland, of New Haven, gives a general summary of his own and other people's work upon the development and anatomy of the organs of taste.

In short, the articles, which are perhaps not in the highest degree original or matured, are, nevertheless, not a little valuable, and an examination of these Transactions well repays the reader. J. G. A.

American System of Practical Medicine. Edited by A. E. Loomis, M. D., and W. G. Thompson, M. D. Vol. III. Lea Bros., Phil. 1898.

As in the preceding volumes of this work, so here the selection of contributors has been made with a view to special excellence in the several

departments, and the majority of articles are, therefore, from men who are enabled to write "not as the Scribes."

Among the nineteen whose articles form the basis of the present volume are such names as Hare, Dock, James, Kinnicutt, Starr, etc. Canada is ably represented by Drs. Graham (of Toronto), and James Stewart and F. G. Finley (of Montreal).

Dr. Graham deals with Diseases of the Liver and Gall-Bladder, and has furnished what is undoubtedly one of the most valuable contributions of its kind to our present text-book literature. In a space of nearly 200 pages the subject is lucidly explained, and the most recent work is discussed in a manner which cannot but be pleasing to every reader.

The editors are to be congratulated on the excellence of their choice, and the literature that has emanated from them. C. F. M.

Lectures on the Actions of Medicines. Being the Course of Lectures on Pharmacology and Therapeutics, delivered at St. Bartholomew's Hospital during the Summer Session of 1896. By T. Lauder Brunton, M.D., F.R.S. London: Macmillan & Co.; New York: The Macmillan Company. 1897.

Of the text-books upon Pharmacology and Therapeutics at present in use, while many are excellent and admirable in their arrangement and scope, it must be confessed that, with scarcely an exception, they are somewhat dry and forbidding. They are not works which the student or practitioner willingly takes up to enjoy a spare hour by the reading thereof; indeed, we think that most of us, looking back upon our student days, will remember, with more or less of a shudder, the dry task that it was to get up, from text books, these subjects of pharmacology and therapeutics, although those of us who saw beyond the dry presentation of the subject, and worked to gain a grasp of the scientific principles underlying the mass of details, must have abundant cause in practice to be thankful for the grasp they then gained of the principles of rational treatment. Dr. Lauder Brunton, whose reputation as a pharmacologist is, we need not say, world-wide, has, like many another modern teacher, realized these difficulties and discouragements, and the lectures here published are the result of his determination to attract the student and reader to take an intelligent interest in these matters. The work before us does not pretend to be a complete manual of the subjects of which it treats; it is, as he points out, abundant in some parts and scanty in others, but the main object throughout the whole is to excite the interest of the student and of the reader, and to impress certain main points which will form a nucleus of his knowledge around which he may afterwards group more information. In the author's introductory remarks he points out that the first course of lectures which he gave in the seventies were the fullest and most complete, and, from an examination point of view, the most satisfactory. To insure that nothing should be missed, they were carefully written down

and read out to the students; but, as he soon found out, the fact that they were read lessened their effect upon the students, and the amount of information crammed into them during the hour was far more than they could comfortably digest, so that now each lecture, as here given, contains only as much as the student or the reader can comfortably take up. The result is a work which, thanks to Lauder Brunton's simple style, is delightful reading—a work which, as a layman declared to us, is as interesting as the best novel, so that, once taken up, one is impelled to read through to the last word. Rarely indeed have we come across a medical work so pleasant to read. It is quite possible—in fact, we know,—that other leading pharmacologists disagree with Lauder Brunton's presentation of not a few points in connection with the subjects. It must always be remembered that he has his pet theories and idiosyncrasies; but, granting this, the work is so suggestive on every page that the ordinary man, to whom in the past pharmacology has appeared to be an experimental science not sufficiently advanced to be of practical every day use, and whose therapeutics have been, alas! haphazard, must, from the moment he reads this book, regard the subjects in a new light, and must learn to appreciate the great and practical importance of a scientific knowledge of both. We can thus most cordially recommend the work, not so much as a text-book, but as the most valuable aid we have as yet come across to a knowledge of the action of medicines, as a hand-book which every student would do well to possess; while to the practitioner we would recommend the work as a most fresh and suggestive presentation of the subjects. We have no hesitation in recommending everyone to obtain the work for the pleasure and the profit which he will obtain in the reading thereof. J. G. A.

The Practice of Surgery. A Treatise on Surgery for the use of Practitioners and Students. By Henry R. Wharton, M.D. Demonstrator of Surgery in the University of Pennsylvania; Surgeon to the Presbyterian and the Children's Hospital; Surgeon to the Hospital of the University of Pennsylvania; Consulting Surgeon to the Bryn Mawr Hospital; Fellow of the American Surgical Association: and B. Farquhar Curtis, M.D., Professor of Clinical Surgery in the New York Post-Graduate Medical School and the Woman's Medical School of the New York Infirmary; Surgeon to St. Luke's Hospital and the New York Cancer Hospital; Fellow of the American Surgical Association. Profusely illustrated. Philadelphia: J. B. Lippincott Company. Canadian Agent: Charles Roberts, 593a Cadieux Street, Montreal. 189.

The great activity in surgical work is evidenced by the number of good surgeries published within a very few years. The authors of the present volume do not attempt to deal in an exhaustive manner with all surgical diseases with the fullness and detail of some of the larger systems, but,

as indicated on the title page, they have prepared a book for practitioners and students. A somewhat careful perusal of the book shows that they have succeeded very well indeed. The different subjects are handled carefully and thoroughly, with due regard to brevity, and yet the meaning is clear and the illustrations are, as a rule, very plain and good. The chapters on the principles of surgery are delightful reading and not overburdened with that minuteness of detail only understood and appreciated by laboratory men. Full directions are given for the preparation of surgical dressings, the sterilization of instruments, and the preparation of patients for operation.

An important part of any book on surgery is the chapter on the diseases and injuries of bones, and that on the diseases and injuries of joints. These chapters in the present volume are among the best. The symptoms and treatment of this important part of surgery are exceedingly clear and the recommendations safe and reliable.

The weakest parts of the work are in what are called the specialties. Orthopædic surgery is hardly up to the standard. It is a debatable question whether gynæcology should not be left out of ordinary works on surgery. While it is quite true that a large part of a gynæcologist's work is operative, and while it is also true that gynæcological operations, so called, are among the easiest of performance and the freest from danger, yet their proper performance requires a special training in detail and technique, and this is lacking in most works on general surgery and in the volume under consideration. The patient might well be pitied who submitted to an abdominal hysterectomy, the operator knowing only what is taught in this book. Taken altogether, the book is a credit to its authors and publishers, and is one of the most admirable one-volume books on surgery that we have seen. G. E. A.

The Medical Annual and Practitioner's Index. A work of reference for medical practitioners; by thirty-three contributors, 1898, sixteenth year. John Wright & Co., Bristol; Canadian Agents, J. A. Carveth & Co., Toronto. Price, $2.00. Pp. 710.

To this annual, now in its sixteenth year, there have been added several new features which greatly enhance the value of the work. A report of the year's legal decisions affecting the medical profession directly or having reference to the public health has now been attempted for the first time and will be found of use to anyone having occasion to refer to the subject. As in former years, there are a number of original articles on subjects which the editors consider it is desirable to have information beyond what appears in the review of current literature. Among these are: Congenital dislocation of the hip, by A. H. Tubby and Robert Jones; Obliteration of the deformity in Pott's disease, by the same authors; Detection of stone in the kidney by X rays, by E. Hurry Fenwick; and Electro-therapeutics, by A. D. Rockwell.

An atlas of "Bacteria Pathogenic in Man" has been commenced in the present number and will be completed next year.

The book is well illustrated by thirty plates and a large number of wood cuts in the text, and can be recommended as containing a large amount of information arranged in a manner readily accessible to the busy practitioner. G. G. C.

The American Year-Book of Medicine and Surgery. A Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, drawn from Journals, Monographs and Text-Books, of the Leading American and Foreign Authors and Investigators, collected and arranged with critical editorial comments by Samuel W. Abbot, M.D., John J. Abel, M.D., J. M. Baldy, M.D., Chas. H. Burnett, M.D., Archibald Church, M.D., J. Chalmers DeCosta, M.D., W. A. Newman Dorland, M.D., Louis A. Duhring, M.D., Virgil P. Gibney, M.D., Homer W. Gibney, M.D., Henry A. Griffin, M.D., John Guitéras, M.D., C. A. Hammond, M.D., Howard Hansell, M.D., Barton Cook Hurst, M.D., F. Fletcher Ingals, M.D., Wyatt Johnston, M.D., W. W. Keen, M.D., Henry G. Ohls, M.D., William Pepper, M.D., Wendell Reber, M.D., David Riesman, M.D., Louis Starr, M.D., Alfred Stengel, M.D., G. N. Stewart, M.D., J. R. Tillinghast, Jr., M.D., Thompson S. Westcott, M.D. Under the general editorial charge of GEORGE M. GOULD, M.D. W. B. Saunders, Philadelphia, 1898. Pp. 1077. Price, $7.50. Canadian Agents: J. A. Carveth & Co., Toronto.

We have in this volume of upwards of a thousand pages not only a record of the progress made throughout the different departments of medical science during the year 1897, but, what adds greatly to the value of the work, a critical review of such by the leading American authorities in each department.

In Medicine, under the charge of William Pepper and Alfred Stengel, the Widal serum test for typhoid fever is looked upon as the most valuable advance of the year. In a table compiled from various sources it is shown that in 3779 reported cases correct results were obtained in 96.5 per cent., the percentage of reactions in typhoid cases being 95.5, and of no reactions in nontyphoid cases 98.4.

Among other points of interest we note the successful institution of a serum treatment for the bubonic plague, mainly through the labours of Yersin; the discovery of the bacillus icteroides in yellow fever (Sanerelli); some interesting experimental work on blood composition; and the recovery of two cases of purulent pericarditis through surgical interference. Shott's method of "resisted movements" is still under discussion and reports are mostly favourable. The author himself was able to show by means of skiagraphy that the breadth of the heart, after the gymnastics, was considerably diminished. Organotherapy still seems to

have a great many advocates, but apart from the well established use of the thyroid, no advance can be recorded. Under the heading of Instruments, one is glad to note that the phonendoscope is at last being valued on its merits. Instead of taking the place of the stethoscope, there is abundant evidence that it is only occasionally of use in delimiting the boundaries of organs. The value of the skiagraph has been proved in the diagnosis of intra-thoracic aneurysms, pulmonary consolidation and cavities, and cardiac hypertrophies.

In Surgery, the general trend, according to the editors, has been in the direction of enlightened conservatism. Very little new has been devised. Subjects of interest are, the position of iodoform in surgery, the use of formaldehyde as a disinfectant, the utility of antistreptococcic serum, the treatment of inoperable cancer of the mamma by oophorectomy, and of other parts by Coley's fluid—a mixture of the combined toxins of bacillus prodigiosus and erysipelas. That the surgery of the veriform appendix is still of very great interest is evidenced by the fact that 25 pages are given to its consideration, the points discussed being mainly with regard to the technique and the time to operate. Bassini's operation for the radical cure of hernia receives commendation from many sources; the latest statistics show the failures to be reduced now to 5 per cent., and the mortality to .28 per cent. Among new departures in treatment we note, the forcible correction of the deformity in Pott's disease, and puncture of the kidney in albuminuria.

In Obstetrics, the question of the higher education of midwives has been under discussion in England. Serum therapy in puerperal sepsis is still *sub judice* and is likely to have only a limited field of usefulness. Vaginal section in extra-uterine gestation has many advocates, but has not yet been proved an improvement upon older methods. The danger of labour after the operation for antefixation of the uterus is pointed out. Symphysiotomy has been practically abandoned in favour of Cæsarean section.

In Gynæcology, very little of value is recorded. Organotherapy has not been a success. The subject of bicycling in women is still attracting a large share of attention.

In Pathology, considerable work has been done on the etiology of tumours, and two Italian pathologists, Binaghi and Roncali have published observations, not yet verified, showing the etiologic relation of the blastomycetes to cancer. Coloured plates show the forms of these parasites in epitheliomata from seven different situations.

In Orthopedic Surgery, the correction of spinal deformities as already mentioned is the greatest change of the year.

In Ophthalmology, the X rays have been utilized in the localization of foreign bodies in the eyeball and orbit and many advances of minor importance are noted.

Three new departments have been created out of what last year came under one heading. These are Physiology, by Prof. John J. Abel, of Johns Hopkins Hospital; Public Hygiene and Preventive Medicine, by Samuel W. Abbott, Secretary of the Massachusetts State Board of Health; and Legal Medicine, by Dr. Wyatt Johnston, of Montreal. G. G. C.

The Year Book of Treatment for 1898. A Critical Review for Practitioners of Medicine and Surgery. Lea Brothers & Co., Philadelphia and New York.

This is the fourteenth publication of a very ably conducted annual review. Most of the contributors are recognized English authorities. Amongst others we note the well-known names of Garrod, Buxton, Reginald Harrison, Manson, Owen, Malcolm Morris and Dawson Williams. The volume is of convenient size and well printed, and contains a critical review of all important advances made in the several departments of medicine and surgery. We have much pleasure in recommending it to our readers. A. D. B.

Appendicitis and Its Surgical Treatment, with a Report of Seventy-Five Operated Cases. By Herman Mynter, M.D. (Copenhagen), Professor of Operative and Clinical Surgery in Niagara University, and Surgeon to the Sisters of Charity Hospital in Buffalo, New York. Philadelphia: J. B. Lippincott Company. 1897. Cadadian Agent: Charles Roberts, Montreal.

The degree of Doctor of Medicine is not conferred in Denmark at gradua tion as in America. It requires the writing of a monograph, showing special studies and individual experience, and is equvalent to *Habilitation-Schrifft* in Germany, conferring the right to give lectures in the halls of the University as *Private docent*. Desiring to obtain the degree of Doctor of Medicine from his *alma mater*, the University of Copenhagen, twenty-six years after graduation, the author submitted this monograph to the University, and it was accepted in July, 1897.

Dr. Mynter gives a most interesting history of appendicitis. One wonders that the condition was not more fully understood in the early part of the present century. As far back as 1759 Mestivier reports a case of appendicitis going on to abscess formation. The abscess was incised, the patient died, and at the autopsy an encrusted needle was found in the appendix as the cause of the abscess. The history of subsequent cases reported, often at intervals of several years, is most instructive, and is a good answer to those who would make us believe the disease to be a development of recent years, some even insinuating that it is a creation of modern aggressive surgeons. Subsequent chapters deal with the etiology, pathology, symptomatology, complications and sequels, diagnosis, prognosis and treatment in a clear, interesting and instructive manner. The medical and surgical treatment

are carefully compared, and the different indications pointed out, in a manner that cannot but be helpful.

Finally the histories of seventy-five operated cases are given, and many of these cases are of great interest. The book is well written, and discusses the salient points of this acute surgical disease in a fair and practical manner. G. E. A.

International Clinics. A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology and Dermatology, and Specially Prepared Articles on Treatment. Edited by JUDSON DALAND, M.D., J. MITCHELL BRUCE, M.D., F.R.C.P., and DAVID W. FINLAY, M.D., F.R.C.P. Volume IV., Seventh Series, 1898. J. B. Lippincott, Philadelphia. Canadian Agent, Charles Roberts, Montreal.

This volume contains thirty-eight lectures, some of which are by the leading clinical teachers of Europe and America, on subjects covering almost every department of medicine and surgery. All are of practical interest, and have been well selected with reference to the objects for which the quarterly is intended. A few of the subjects discussed are:—Poisons and Their Treatment, by Herman D. Marcus, of Philadelphia; Diabetes Mellitus, by George Klemperer, of Berlin; The Present Position of the Diagnosis of Gastric Disease, by I. Boas, of Berlin; Concerning the Blue Line in the Gums in Lead Poisoning, by D. D. Stewart, of Philadelphia; The Differential Diagnosis of Typhoid Fever, with Especial Reference to the Diazo Reaction and the Agglutination Test of Widal, by Charles Lyman Greene, M.D., of St. Paul. G. G. C.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, February 18th, 1898.

ROBERT CRAIK, M.D., PRESIDENT, IN THE CHAIR.

Fibroids of the Uterus Expelled after Electrical Treatment.

Dr. LAPTHORN SMITH reported two cases of absolute and complete cure of fibroid tumour of the uterus by electrical treatment, method of Apostoli. A tumour about the size of a large orange and weighing about a pound, which had been expelled from the uterus of one of them, was shown. This patient was a single lady, 31 years of age, who had been sent to him from Toronto on account of profuse hæmorrhages which had exhausted her, and for intense pain at the periods. After 40 applications of about 100 milliamperes + for eight minutes, she was taken with labour pains, which lasted two days, at the end of which time the tumour was found in the vagina, and completely filling it. An ecraseur wire was put around it and its connections cut through, after which it was delivered by forceps. An effort was previously made to marcellate it, but was abandoned on account of its density. The perineum was lacerated in extracting the tumour, but it was immediately repaired. The patient made a good recovery. From the first application of electricity to the uterus the headache which had been almost constant for several years left her and never returned. The hæmorrhages and dysmenorrhœa are also cured.

Case II. was a married lady from Holyoke, Mass., who received only 10 + galvanism of 150 mm., and who then left for home. On the train labour pains came on and the tumour, larger than the previous one, was expelled, and she has since remained perfectly cured. She refused to lend him the tumour so he was unable to show it.

Angio-Sarcoma of the Skin.

Dr. F. J. SHEPHERD showed this case, a report of which will appear later.

Cerebro-Spinal Meningitis.

Dr. JAMES STEWART and Dr. C. F. MARTIN read the report of a case of this disease, and demonstrated under the microscope the meningococcus of Weichselbaum found in various organs. (See the March number, page 149.)

Dr. J. G. ADAMI said that the question had been asked as to how the meningococcus reached the brain. In this disease many observers had found them in the nasal passages, lungs, and bronchi, and it was likely that the disease started in the respiratory tract. In such a case they probably found their way into the meninges through the nasal sinuses.

Two Cases of Suprapubic Cystotomy with Unusual Features.

Dr. JAS. BELL reported, very briefly, the case of a man on whom he had attempted to do a suprapubic lithotomy, but found that there was absolutely no preperitoneal space. A careful dissection was made and a small incision made as low down as possible, which went directly into the peritoneal cavity. The wound was closed, and two weeks later the calculi were removed by lateral perineal incision. The patient was a strong, well nourished and rugged French-Canadian labourer, æt. 39. He had had gonorrhœa at 16 years of age, from which time he had always had urinary symptoms. He had had another attack of gonorrhœa at 34 years of age. His symptoms had been much worse after the second attack of gonorrhœa, and had become very urgent during the past two years. He had a left inguinal hernia, for which he had worn a truss from boyhood, and at the age of 19 he had had a suppuration in the right groin which discharged externally for four or five years. The question was whether these pathological conditions in early life could have modified the distribution of the peritoneum in the lower zone of the abdomen, or whether the condition was simply an anatomical abnormalty or irregularity.

Also, the case of a man, æt. 54, an unmarried farmer of good habits who had forced a head of green timothy hay into his urethra on the 19th July, 1897. Efforts were made to extract it, but without success. The bladder was opened above the pubes on the 8th of January, 1898, and the foreign body removed. It was about three inches long and encrusted with phosphatic deposit, so that it was as large as the middle finger. It broke up very easily, and there was some difficulty in washing out all the fragments. (Specimen shown.)

The patient made a good recovery.

Sir WILLIAM HINGSTON said that the first case showed the necessity of taking great care in avoiding the peritoneum. Two days before he had performed the same operation and found the peritoneum at least three fingers' breadth from the pubes. He asked Dr. Bell why he did not use the lithotrite.

In reply to Sir Wm. Hingston, DR. BELL said that he preferred lithotomy to lithotrity in this case, as he felt there would be

trouble in crushing so as to make a clean removal of the organic foreign body. As it was, with a wide open wound in the bladder there was great difficulty in removing all the particles of hay seed and phosphatic accretions.

Some Experimental and Clinical Observations on the Use of Antiseptics in the Peritoneal Cavity.

Dr. J. Clarence Webster read a paper on this subject, which will be published later.

Stated Meeting, March 4th, 1898.

Robert Craik, M.D., President, in the Chair.

Uræmic Intoxication, with Special Reference to its Pathology and Treatment.

Dr. C. A. Herter, of New York, gave an address on this subject, which will be published in the May number of the Journal.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXVII. APRIL, 1898. NO. 4.

THE NEURON.

We are glad to see that Prof. Michael Foster, assisted by Prof. Sherrington, has recently brought out a new edition of that volume of his text book which deals with the central nervous system, and that in it he has embodied some of the principal results of the chrome silver and methylene blue methods of staining.

We looked with interest to see what stand he would take with regard to the nomenclature of the nerve cell, which has been getting somewhat confused. He follows Waldeyer in applying the term "neuron" to a complete nerve cell, including its processes. He divides the neuron as follows: 1. The nucleus. 2. The cell body, for which he proposes the term perikaryon. 3. The processes. He divides the processes into: 1. The axis cylinder process, which may also be called the neuraxon or simply the axon; it is usually single and forms the axis cylinder of a nerve fibre. 2. The so-called protoplasmic processes or, as he prefers to call them, the dendrites. Of these most cells have several, and, after a short course, they usually end in branches quite near the cells. He tells us that the dendrites usually carry impulses into the cell body, while the axons conduct away from the cell. He describes the usual ending of the axon in an arborescent tuft (the "end brush" of some writers) in the neighborhood of the body or dendrites of some other cell. For this relation between the axon of one cell and the dendrite or body of another cell he proposes the term "synapsis."

We hope that these or other suitable terms will soon be accepted and uniformly used by all writers on the subject, as at the present time it is often hard to know what significance an author wishes to be attached to the terms he makes use of. This state of affairs may, in part at least, be traced to a presidential address by Professor Schaefer at the annual meeting of the Neurological Society in 1893. In that

address he took issue with Waldeyer on the latter's use of the word neuron for the whole nerve cell and expressed himself in favor of applying the term to the axis cylinder process alone. In this use of the term Schæfer has been followed by the American text book of physiology. This is especially unfortunate, as the American text book is one of the few books accessible to students which deals with the recent work on the nerve cell.

There is one point on which we wish Professors Foster and Sherrington had expressed themselves more fully, and that is the proper terms to be applied to the various parts of the spinal ganglion cell and its T shaped process. There is no difficulty in naming the nucleus and cell body. The branch of the T turning up towards the spinal cord evidently bears the two most essential characters of an axon in that it becomes a nerve fibre, and carries an impulse away from the cell; but when we try to name the branch coming up from the periphery we meet with a difficulty, for like an axon, it forms a nerve fibre, and yet, like a dendrite, it carries impulses towards the cell body, not away from it.

Foster does not express himself definitely on the term to be applied to it. Schæfer and the American text book consider the vertical limb of the T an axon with two branches, of which one descends to the periphery and the other ascends to the cord, but in calling the descending branch an axon they ask us to admit that we have here an axon differing from all others in that it carries impulses towards the cell body.

Much of course depends on the definitions we apply to our terms, but a very similar problem has been faced and dealt with in connection with certain cells of the sympathetic ganglia in the intestinal canal. These cells were described by Cajal as possessing several axons, but Dogiel has shown that while one process is distinctly an axon, the others, if traced to their terminations, may be seen to have the characters of dendrites, with the exception of being somewhat longer than most others, and he consequently classes them as dendrites. His conclusions have been confirmed by Huber on this side of the water. Some of the dendrites of sympathetic ganglia have been shown by Dogiel to assume a close resemblance to ordinary non-medullated nerve fibres, and Huber claims with much reason that the peripheral branch of the spinal ganglion cell is also a dendrite.

As to the nature of the vertical arm of the T process, this may be regarded either as a fusion of the axon and dendrite, which has taken place in course of development, or else as an extension of the cell body

If we accept these views, then we must admit that a dendrite may, under certain circumstances, become an axis cylinder of a nerve fibre and must modify our definitions accordingly, but we no longer have any known exception to the rule that dendrites carry impulses into the cell and axons carry them away to the neighborhood of some other cell.

These questions with regard to the proper use of the various terms should be discussed and settled as soon as possible, for while uncertainty exists it is almost impossible for the busy practitioner to get such clear ideas on the subject as is desirable even for his clinical work.

The fact that the newer histology is important to the clinician is referred to in a recent address by Sir William Gowers as follows:—

"Such facts as these are essentially practical. They enable you to form more clearly and more adequately that visual picture of the disease which is before you, the ability to construct which can be cultivated and increased so much by use and practice, and which enables a man to obtain a much more clear conception of what there is in the individual case before him, to forecast more accurately its future course, and to discern with precision by what means that future course may possibly be modified."

THE BRITISH GOVERNMENT AND VACCINATION.

As most of our readers doubtless know, for several years now there has been in the Old Country a ferment with regard to vaccination, and for years a Royal Commission sat inquiring into the subject in all its aspects and examining a host of witnesses. That Commission collected together a mass of most valuable material, too much, in fact, for the ordinary individual to thoroughly grasp, and when eventually it brought in its report some of its recommendations appeared to the medical mind to be logically far from strong. Now, acting on their recommendation, the Home Government has, after considerable deliberation, brought in an amendment to the law with respect to vaccination, and the new clauses introduced are worthy of some little consideration and of possible application in this country.

Previously vaccination was compulsory, and those whose children were not vaccinated before they were three months old were liable to be brought before the courts and fined. For so long as the children were not vaccinated, for so long were the parents liable to repeated conviction and repeated penalty. Naturally, those who conscientiously objected to the process were by these proceedings elevated to the rank

of martyrs, and among the more ignorant of the population there was a constant agitation against the law. As it stood, the law, if it was to be of use, did not go far enough. If it is essential to the welfare of the community that every individual be vaccinated, then the only logical procedure to invoke against those refusing is either to banish the offending family from the community or to vaccinate the children despite the parental opposition. Either of these courses is opposed to the sense or want of sense of the people, but it is politically a grave mistake to bring in any legislation which affords people the cheap comfort of being martyrs. The new amendment enacts that no parent should be fined more than once for non-compliance with the law. Add to this, where the family is too poor to pay for vaccination, the public vaccinators are required to employ only glycerinated lymph, and this not, as in the past, at central stations in each town, to which the mothers have to bring their babies, but the vaccinator is to perform the operation at the home of the child. This liability to only one fine, the personal influence of the visiting vaccinator, and the lessened trouble to poor parents, will, it is hoped, serve to overcome nearly all the opposition to vaccination which has been manifested under the old law. Finally, whereas it was before obligatory to have the child vaccinated during the first three months, the time is extended to twelve months.

This extention of the time, while advantageous in some respects, presents also certain disadvantages. It is beneficial in that, under the old system, the time to perform the operation was liable to coincide with the development of various infantile eruptions, which might assume a serious aspect and which were frequently ascribed to the act of vaccination. Thus given a longer life period during which the operation may be performed, the vaccinator has more chance of being assured against such complications. On the other hand, after the ninth month children are becoming active, creeping about and using their limbs vigorously, and undoubtedly the area of scarification and eruption cannot be kept in as cleanly a condition as it can during the earlier months of infancy. On the whole, though, we believe that the experience of those who are most conversant with children and the diseases of children will be in favor of this extension of the time.

The most satisfactory step forward in this new legislation is the prominence now given to glycerinated calf lymph. In a recent retrospect in these pages this subject of the employment of glycerinated calf lymph was discussed at some little length. It is almost unnecessary to say that where vaccination is made a public duty it is an instrument of great force in the hands of the public vaccinators

to be able to assure all parents that the material used by them is absolutely pure and free from danger of setting up disturbing symptoms, and to take the stand that if any complications do ensue, then those complications are due not to the inoculated material, but to want of cleanliness. But over and above this, it seems to us the duty of governments which enjoin vaccination, that they should, so far as in their power lies, compel the use of a pure and uncontaminated virus. We are now in a position to state that a virus which contains extraneous micro-organisms is an adulterated virus, and as governments rightly visit with considerable penalty the adulteration of food stuffs, even more ought they to attempt to suppress the employment of material which may possibly lead to conditions of disease. It is true that with ordinary calf lymph employed when fairly fresh and with all due precautions as to cleanliness, complicating rashes and disturbances are rare: nevertheless we cannot overlook the fact that such complications may possibly ensue, brought about by the contamination of the lymph itself. The addition of glycerine to calf lymph results surely, after an interval of a few days, in the death of such contaminating microbes, the vaccine thus becoming a pure material. Now that in the Old Country and upon the Continent, in France and Germany, the use of such lymph is enjoined by the governments, and here on this Continent, the health boards of New York and Chicago have already taken up the matter, the time has come for our provincial boards of health and the Dominion authorities to give this matter serious consideration, and we trust that without delay they will act in a matter of such public importance.

THE FORTHCOMING ELECTION AND THE REGISTRAR OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF QUEBEC.

The agitation in favor of reform in the mode of representation at the College progresses steadily, and now there can be no doubt that if the interest that has been taken in the subject continues, the July meeting of the members will lead to a thorough and radical change in the method of conducting affairs, but, as we already say, the interest must be kept up to the last moment, and inasmuch as, according to the present methods, the proxies of those absent from the meeting can be made to play so prominent a part, it is absolutely necessary that there be no lack of attendance, and that members make sure that their proxies are in proper hands.

And here, it seems to us, is a very serious aspect of the proxy problem. It is, under any circumstances, a matter calling for reform, that

the Registrar of the College into whose hands all the proxies must pass for certification should himself, although a paid official of the Board of Governors, be one of those whose election is dependent upon a vote cast at the election. That such should be the case places that official in a most unfavorable position, for if it so happens that on the day of election proxies are found to be invalid, either from incomplete payment of dues or from any other cause, this opens a way to accusation against that official, that he has for personal reasons neglected to notify members concerning their standing, and so is a party to the forfeiture of the members' privileges. This is the slightest of the charges that might possibly be brought against such a paid official, whose tenure of office depends upon the present system of voting, and we propose in a subsequent number to refer to other phases of the same obvious source of danger.

Altogether the principle of having the Registrar selected as at present is thoroughly faulty : as in the Old Country in connection with the General Medical Council, so here in this Province, the Registrar should be a permanent official whose position should in no wise be affected by the voting of the members ; indeed, it is not necessary that such official should be a member of the profession, for his position is strictly that of Acting Secretary or Recorder of the proceedings of the College. Obviously, it would be better that he possessed no vote upon the Board. Indeed it may with truth be said that the disfavor with which the College is now viewed by the profession and the present agitation for reform, have been wholly and entirely brought about by this primary piece of mistaken legislation, whereby the paid Registrar canvasses for re-election every third year, and is himself an active member of the Board. We would therefore strongly urge upon the members of the profession in this Province the advisability of introducing a further reform at the forthcoming meeting in July, and of modifying the status of the Registrar.

INTERPROVINCIAL REGISTRATION.

There seems to have arisen some misapprehension in regard to the question of inter-provincial registration This is especially evident to some physicians who have gone lately to British Columbia under the impression that they could get a license there on presentation of their Province of Quebec license. This is very unfortunate and has resulted in some hardship and whoever is responsible for thus misleading young doctors should have informed himself more correctly. The question of inter-provincial registration is an all-important one and is growing in

favor, but is not yet an accomplished fact. As the law stands to-day, no one can obtain a license to practice in British Columbia without passing the examination of the British Columbia Medical Council and paying a fee of one hundred dollars, unless his name was on the Imperial Medical Register on or before the 30th June, 1887. The next examination will be held in Victoria on the 3rd May, 1898. No permits to practice can be obtained in any other than the regular way, as indicated above.

MEETINGS OF SOCIETIES.

The meeting of the American Medical Association will be held this year at Denver, Colorado, on June 7th. The following form the local Committee of Arrangements: Chairman, W. Graham, M.D.; Vice-Chairman, B. A. Fisk, M.D.; Secretary, W. A. Jayne, M.D.; Assistant Secretary, C. E. Edson, M.D.; Treasurer, J. T. Eskridge, M.D.

Dr. J. M. Beausoleil, President of the Canadian Medical Association has received the following letter, extending to its members an invitation to the Denver meeting:

THE AMERICAN MEDICAL ASSOCIATION.

DENVER MEETING, JUNE 7TH, 1898.

Committee of Arrangements,
306 McPhee Building,
DENVER, Colo., March 15, 1898.

DR. J. M. BEAUSOLEIL,

President Canadian Medical Association, Quebec,

MY DEAR SIR,—I am requested by the local Committee of Arrangements for the coming meeting of the American Medical Association, which will be held in Denver on June 7 to 10 next, to extend to you and the members of the Canadian Medical Association a cordial invitation to attend this meeting. Great interest is being taken throughout the United States, and this promises to be one of the most successful meetings of the American Medical Association which has ever been held. Special trains are being arranged from many of the Eastern cities to bring the delegates to Denver at that time, and the railways are heartily taking up the matter and promising enthusiastic co-operation to make the occasion an unqualified success. The opportunity will be an unusual one for those desirous of seeing the great health resorts of Colorado and the Rocky Mountains under favorable circumstances and at very much reduced cost. Delegates from Canada may feel assured that the members of the profession in Denver and Colorado will heartily welcome them to this meeting, and will do all in their power to make their excursion an enjoyable one. Visitors from medical

societies outside of the United States are invited to register without fee, and to exercise all the privileges of membership, except, of course, that of voting. We hope that the Canadian Medical Association will be represented by a very large delegation.

Will you please see that some notice of this invitation is sent to the members of the Association throughout the Dominion, so that they may feel assured of a hearty welcome if they come and are properly introduced by your Society.

I remain, dear sir,

Yours very truly,

(Signed) EDMUND J. A. ROGERS (McGill),

Chairman Committee on Foreign Invitations.

Obituary

SIR RICHARD QUAIN.

With Sir Richard Quain has passed away a figure which has been an important one in English medical circles for now fifty years, one which was unique in professional and social life in London. During this period there have been physicians more eminent, physicians more fully occupied in practice, but not one who has lived on the same terms of cordial friendship with many of the most distinguished men of two generations, and very few who, through their social influence, have been able to serve the other members of the profession to the same extent as he has done. He was, in short, a type of the fashionable consulting physician of the day. Endowed with excellent common sense, with a clear insight into men and things, and with steady and unceasing industry, he at the same time possessed the geniality and good nature of the Irishman, and, added to these, a ready power of conversation, a very fair gift of the Irishman's ready wit, and an abundant fund of stories and reminiscences. Thus trusted and sought after in the consulting room, his presence was ever welcome in society. And thus it was that he numbered among his intimate friends such men as Carlisle, Landseer, Maclise, Millais, Dickens, Foster and Sir Theodore Martin. A host of others might be mentioned.

Born at Mallow, in the county of Cork, in 1816, he was, when fifteen years old, apprenticed to a surgeon apothecary at Limerick, and at the end of his apprenticeship, there being great distress then in Ireland, was received into his uncle's tannery. But when times began to mend he turned again to medicine and entered as a student at University College, London, where two of his cousins were already upon the medical teaching staff. He had there a brilliant career, and in 1842, when he proceeded to the degree of M.D., he was the only one of his year to receive honors in medicine, obtaining the gold medal and a certificate of proficiency. Settling in London, he rapidly obtained the reputation of being one of the most capable young physicians of his day.

The *Times* gives a good instance of his acumen: "Quite early in his career he was requested by the then coroner for Middlesex, the late Mr. Wakley (the founder of the *Lancet*), to make a post-mortem examination in a case which attracted considerable notice at the time.

A man who for some months had been in a despondent frame of mind came one day to his wife and displayed to her a piece of paper labelled 'arsenic' and said that he had swallowed what it had contained and that it was 'all over with him.' The man was taken to a hospital, where the resident officers applied all the most approved remedies for arsenical poisoning with great vigour, but the man died in spite of them. The druggist from whom the parcel had been procured said that the man had asked for arsenic, and that in consequence of his manner and appearance cream of tartar had been supplied under an arsenical label. A quantity of arsenic was, nevertheless, found in his stomach. Not satisfied with this, Dr. Quain pursued his enquiries, and found that no arsenic had passed out of the stomach into the intestinal canal. He inferred, therefore, that what was found had been introduced by a stomach pump or some similar means after death had occurred, and it was ultimately shown that this had been done by the resident medical officers of the hospital, who seemed at last to have some notion that the case was not one of arsenic poisoning at all, and who had endeavored to conceal the error into which they had fallen. The acuteness with which Dr. Quain suspected the truth, and the skill with which he brought it to the test of experiment, were much appreciated and exercised an important influence in confirming the reputation which he had gained as a student."

Unfortunately, perhaps, for Dr. Quain's reputation as a teacher, he was never attached to any large teaching hospital, but he readily came to the fore in appointments connected with the business of the profession. In 1860 he was selected by the Queen and Council to be a member of the Senate of the University of London, and in this connection he was mainly instrumental in procuring the existence of the "Brown Trust," and he became a chairman of the Brown Institution for the study of the diseases of animals. In 1865 he was appointed a member of the Royal Commission for the investigation of the cattle plague, which had then been recently introduced into the country and had caused a terrible mortality among English herds. He it was who, by his strong grasp of the facts of the position and by his able letters to the press, convinced the country that the only course to be pursued was the absolute prohibition of moving of cattle from infected districts, slaughter of all beasts which had been attacked or exposed to infection, and of all animals imported for food from infected countries He contributed thus more largely than any other individual to the arrest of the cattle plague. Of the Commission of which thus he had been so active a member, Lord Sherbrooke said that "it was the only Royal Commission which had ever done any good." In 1865 he was

also appointed by the Government to be one of the Crown members of the General Medical Council then recently established. From that date he has been reappointed again and again, and in 1891, upon the death of Mr. John Marshall, he was elected president—perhaps the most influential position obtainable by any English practitioner. At the College of Physicians also he was one of the most influential of the Fellows, and, on the retirement of Sir William Jenner, it was a very close contest between himself and Sir Andrew Clark. Had he not been at the time President of the General Medical Council, he would probably have been elected to this high honor also.

In all his public work in the profession he brought to bear a thorough mastery of procedure and an unflagging attention to detail. He was, for instance, chairman of the Pharmacopœia Committee of the Medical Council and attended assiduously all the meetings in connection with the preparation of the first two issues and of the successive addenda, though during the last twelve months he was suffering from cancer of the rectum and indeed had undergone operation for this. Only once did he allow his failing health to interfere with his attendance at the meetings of the Committee. And in June last, although he had not wholly recovered from the operation in question, he, an old man of 81, presided day after day at the meetings of the General Medical Council. It was the good fortune of the writer to be present at the conclusion of this meeting and to hear Sir William Turner's very touching speech of appreciation. "It is not customary," said Sir W. Turner, "for the Council to award a vote of thanks to its President at the conclusion of its meetings, but we cannot regard this as an ordinary occasion. There is a quality which we are apt to regard as specially characteristic of our race—the quality known by the short but expressive term of 'pluck'—this quality has been displayed by the President in no ordinary way." In acknowledging these thanks Sir Richard made his farewell speech to the Council and to the profession. Affected to tears, he said that what had moved him at all times in his work was the sense of duty. When he had to lay down his office it would be with every wish for the welfare of the Council and of its members.

But such steady and unremitting public work for the good of the profession is, it must be confessed with perhaps a little sadness, of ephemeral value. Such work, while appreciated at the time, is little valued by succeeding generations, greatly as those generations benefit from public work well performed. And is it not a little sad also to think that Sir Richard Quain's greatest medical work, namely, the editing of the great Dictionary of Medicine, will not wholly assure his

remembrance in forthcoming generations. For dictionaries also are but products useful for their day and time, and the fame of this dictionary, and the benefit it conferred upon the profession, has led to other and even fuller and more thorough dictionaries and systems of medicine, and of the various branches of medicine, being published in large numbers, more especially on this continent. None perhaps will ever have quite the success that Quain's first dictionary attained; it is worth while to study Quain in order to appreciate the marvellous advance made during the last fifteen years. Probably no more successful work has ever been published, and yet its second edition in 1894 is already completely overshadowed by the new systems of Allbutt and again of American writers. Already, therefore, the interest of Quain's dictionary is largely historical. There remains but one lasting benefit to the profession with which Quain's name ought always to be associated, the discovery namely, or, to be more accurate, the recognition, contained in a paper delivered to the Royal Medical and Chirurgical Society of London in 1850, of Fatty Degeneration of the Heart and the important part played by this in cardiac failure. In this he performed good and lasting work. In other respects, hard as he worked and hard as he strove to do what he considered to be his duty, and great as was his influence upon his contemporaries, it may be questioned, looking at his life from the outside and from a distance, whether Quain accomplished for the profession all that one with his singular opportunities might have accomplished. Much as he did, he might have accomplished more. Obtaining very early in his career influential positions in the leading medical bodies in Great Britain, he was perhaps throughout too much of an official and too little appreciative of the power that lay in his hands to ally himself to those who had liberal and progressive views.

But granting this, he is an interesting study of the popular and influential consultant imbued with a love for work for the profession and with a conscientious desire to be of service.

J. George Adami.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Transactions of the College of Physicians of Philadelphia. Vol. xix. 1897.

The Year Book of Treatment for 1898. Lea Brothers & Co. Philadelphia and New York.

International Clinics. Vol. iv. Seventh Series. 1898. J. B. Lippincott Company. Philadelphia. 1898.

Therapeutics of Infancy and Childhood. By A. Jacobi, M.D. Second Edition. J. B. Lippincott Company. Philadelphia. 1898.

Diseases of Women. By J. C. Webster, B.A., M.D. William Drysdale & Co., Montreal. 1898.

Diseases of the Nervous System. By Charles E. Beevor, M.D. H. K. Lewis. London, 1898.

Prize Essays on Leprosy. By J. A. Thompson, M.D., and James Cantlie, M.A. M.B. The New Sydenham Society. London. 1897.

Selected Essays and Monographs. The New Sydenham Society. London. 1897.

The Medical Annual and Practitioners' Index. John Wright & Co. Bristol. 1898.

A Compendium of Insanity. By John B. Chapin, M.D., LL.D. W. B. Saunders. Philadelphia. 1898.

Atlas of Methods of Clinical Investigation. By Dr. Christfried Jacob. Authorized Translation from the German. Edited by Augustus A. Eshner, M.D. W. B. Saunders. Philadelphia. 1898.

A Manual of Legal Medicine. By Justin Herold, A.M., M.D. J. B. Lippincott Company. Philadelphia. 1898.

Cutaneous Medicine. By Louis Duhring, M.D. Part I, 1895, and Part II, 1898. J. B. Lippincott Company. 1898.

Sajous's Annual and Analytical Cyclopædia of Practical Medicine. Vol. I. The F. A. Davis Company. 1898.

Accident and Injury. By Pearce Bailey, M.D. D. Appleton & Co. New York. 1898.

The Nervous System and Its Diseases. A Practical Treatise on Neurology for the Use of Physicians and Students. By Charles R. Mills, M.D. J. B. Lippincott Company. Philadelphia. 1898.

Appendicitis and Its Surgical Treatment. By Herman Mynter, M.D. J. B. Lippincott Company. Philadelphia. 1898.

The Practice of Surgery. By Henry Wharton, M.D., and B. Farquhar Curtis M.D. J. B. Lippincott Company. Philadelphia. 1898.

The Question of Pelvic Support. Joseph Eastman, M.D. Reprinted from the American Gynæcological and Obstetrical Journal. 1898.

Diagnosis of Abdominal Disorders. Presidential Address by Joseph Eastman, M.D.

Literary Note.

Messrs. Lea Brothers & Co., 706, 708 and 710 Sansom street, Philadelphia, 111 Fifth avenue (cor. 18th street) New York, announce for early publication the following books by eminent authorities. Complete catalogues of the publications of this firm may be had by addressing either their Philadelphia or New York house.

A Manual of Otology. By Gorham Bacon, A.M., M.D., Professor of Otology in University Medical College, New York. With an Introductory Chapter by Clarence J. Blake, M.D., Professor of Otology in the Harvard Medical School, Boston, Mass. In one handsome 12mo. volume, with numerous illustrations.

The Treatment of Surgical Patients Before and After Operation. By Samuel M. Brickner, M.D., Visiting Surgeon at the Mt. Sinai Hospital, New York. In one handsome volume of about 400 pages, with illustrations.

A Text Book of Dental Pathology, Therapeutics and Pharmacology. Being a Treatise on the Principles and Practice of Dental Medicine. By Henry H. Burchard, M.D., D.D.S., Special Lecturer on Dental Pathology and Therapeutics at the Philadelphia Dental College, Philadelphia. In one handsome octavo volume of about 550 pages, with 400 illustrations.

The Principles of Treatment. By J. Mitchell Bruce, M.D., F.R.C.P., Physician and Lecturer on Materia Medica and Therapeutics at Charing Cross Hospital, London. In one octavo volume.

Diseases of the Nose, Throat, Naso-Pharynx and Trachea. A Manual for Students and Practitioners. By Cornelius G. Coakley, M.D., Professor of Laryngology in University Medical College, New York. In one volume, 12mo., of about 400 pages, with numerous illustrations, many of which are in colors.

Diseases of Women A Manual of Non-surgical Gynecology, designed especially for the use of Students and General Practitioners. By Francis H. Davenport, M.D., Instructor in Gynecology in the Medical Department of Harvard University, Boston. Third edition, thoroughly revised and enlarged, with many additional illustrations.

A Treatise on Gynecology. By E. C. Dudley, A.M., M.D., Professor of Gynecology in the Chicago Medical College, Chicago. In one octavo volume of about 600 pages, with 425 illustrations, many of which are in colors.

A Text Book of Anatomy. By American Authors. Edited by Frederic Henry Gerrish, M.D., Professor of Anatomy in the Medical School of Maine. In one handsome imperial octavo volume, copiously illustrated in colors.

Manual of Skin Diseases. With Special Reference to Diagnosis and Treatment. For the Use of Students and General Practitioners. By W. A. Hardaway, M.D., Professor of Skin Diseases in the Missouri Medical College. Second edition, entirely rewritten and much enlarged. In one handsome 12mo. volume with illustrations.

The Principles and Practice of Obstetrics. By American Authors. Edited by Charles Jewett, M.D., Professor of Obstetrics in the Long Island College Hospital, Brooklyn, N.Y. In one handsome octavo volume, with many illustrations in black and in colors.

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXVII. MAY, 1898. No. 5.

Original Communications.

THE PATHOLOGY OF URÆMIC INTOXICATIONS.[1]

BY

C. A. HERTER, M.D.,
Visiting Physician to the City Hospital,
Consulting Physician to the Babies' Hospital, New York.

In venturing to address you this evening on the subject of uræmic intoxications, I am not unmindful of the difficulties that are inseparable from the problem which I shall undertake to discuss. Indeed it cannot be denied that one of the attractions of this subject is the obscurity which surrounds the oft-recurring phenomena which we call uræmic—phenomena that have excited the interest and baffled the insight of Richard Bright, of Traube, of Frerichs, and of many lesser intellects.

Although a study of uræmia that has extended over many years does not make it possible for me to isolate, as definitely as could be wished, the pathological factors concerned in the production of the symptoms of uræmia, I believe I can, at least, indicate the direction in which we should look for an explanation of the nature of these symptoms. It will be my purpose to show that the clinical phenomena which we include under the term uræmia are dependent on toxæmic states rather than upon primarily mechanical causes. In doing this I shall make use of observations which I have accumulated from the study of the blood in 28 cases of uræmia, which have either been observed by me in my medical service in the City Hospital, or have been placed at my disposal by interested colleagues. In addition to this, I shall draw upon facts which have come to my knowledge from a study of experimental uræmic states. It would be a satisfaction to present these facts in full detail, but as this could hardly be done without exhausting your patience, a summary of results must suffice for the present

[1] Read before the Montreal Medico-Chirurgical Society, at McGill University March 4, 1898.

purpose.[1] For the sake of convenience, the facts to be surveyed may be grouped under the following subjects : the toxic properties of the blood in uræmic states as measured by intravenous infusion ; the relation of uræmia to the urea of the blood, to the extractive substances, and to the potassium salts ; cerebral œdema and uræmia ; the internal secretion of the kidney and uræmia ; experimental uræmia from double nephrectomy and its relation to human obstructive uræmia, and other types of human uræmia.

A question of fundamental importance in the pathology of uræmia is whether the blood in this condition is more toxic when introduced into the circulation of animals than is human blood from normal persons. In the hope of answering this question, the blood serum from 28 uræmic patients, who were bled during life, was introduced intravenously into rabbits, proper precautions being taken as regards the freshness of the serum, its temperature, the rate of infusion, the exclusion of air from the vein, etc. The observations were not confined to rabbits, but included in some instances dogs and monkeys. Two different methods of intravenous infusion were employed. In one case the serum was infused into the femoral vein at a fixed rate until the commencement of fatal symptoms. In the other case, the serum was injected in much smaller amount, either into the femoral vein or into an ear vein with a view to ascertaining the minimum dose capable of causing death in the course of 24 or 36 hours. A difficulty which at once confronts the investigator in the use of these methods is the fact that normal human serum is in itself toxic to rabbits in a considerable degree, owing chiefly perhaps to its power of inducing coagulation. Thus I have found that its requires from 25—40 c.c. of normal human serum to the kilo to initiate fatal symptoms in rabbits when the method of continuous infusion is employed, while it seems generally agreed among investigators that the fatal dose of human serum, as employed by the second method, is from 9—12 c c. per kilo. Inasmuch as it is found that there is considerable variation in the toxicity of the same serum for different rabbits of the same weight, notwithstanding every precaution in making the infusion, it is clear that it is necessary to observe much care in concluding that a given class of serums is more than normally toxic.[2]

Of the uræmic serums which were studied with respect to their

[1] The details of the experimental observations will be elsewhere published.

[2] Uhlenhuth claims that the serum should be subcutaneously injected into guinea pigs to avoid the error incidental to intravenous infusions. In several instances where I have employed this method, there seems to be no doubt that the blood was more than normally toxic, judging from the standard of normal toxicity given by Uhlenhuth.

toxicity, 19 were obtained from cases of uræmia characterized by the occurrence of well marked and repeated convulsive seizures,[1] six of these being instances of puerperal eclampsia. In the nine remaining cases the serum was obtained from patients with chronic nephritis, characterized by dyspnœa and high tension pulse—none of these patients having had convulsive seizures. The inferences which we may make from the study of these serums are as follows : The cases of nephritis characterized by dyspnœa and high tension pulse without convulsions, taken as a class, do not yield positive indications that the toxicity of the serum was greater than normal, although in at least two of the nine cases the toxicity was considerably greater than any I have observed in health. On the other hand the least toxic of these serums possess toxic values that come so near the highest toxic values observed in normal serums that we cannot be certain that they are quite normal. More observations are required before a final judgment can be formed regarding these cases. Taken as a class, the serums from the convulsive group of uræmias show a degree of toxicity distinctly greater than any which I have observed for normal serums, and although there are a few of the 19 cases in which the results are difficult to interpret, there seems to be no doubt that an increase in the toxic properties of the blood is a characteristic of cases of convulsive uræmia. This latter statement apparently holds good also of certain serums from patients with puerperal eclampsia, but here again more observations are required. Volhardt has quite recently denied that there is any increase in the toxic properties of the blood of eclamptic patients, but his results cannot be regarded as final.

Admitting that the serum in convulsive uræmia is more toxic than normal serum, the question at once arises, what is the cause of this pathological increase ?

It is not possible at present to give a satisfactory answer to this question, but the following facts bear upon it. In the first place the toxicity of uræmic serum for animals is greatly reduced by exposure to moderate heat, say 60°C. for a few minutes. This is also true of the toxic properties of normal human serum. These facts suggest that the increased toxicity of uræmic blood is dependent on the presence of an increased amount of a toxic proteid substance which is normally present in the blood.[2] We cannot, however, feel certain that the increased toxicity of the serum does not depend on some

[1] In one of these cases there were merely coarse twitchings never amounting to typical convulsions.

[2] The toxic properties of urea, extractives, salts, etc., are of course not influenced by so moderate an elevation of temperature.

unknown foreign substance. A fact which strengthens the view that a proteid substance is responsible for the toxicity of uræmic, as of normal serum, is that the removal of the proteids by means of absolute alcohol almost wholly deprives the serum of toxic properties.

In trying to form an estimate of the significance of an increase in the toxic properties of uræmic as contrasted with normal serums, it is important to recognize that such an increase in toxicity does not constitute proof that the cause of this augmented toxicity is the cause of the obtrusive cerebral symptoms of uræmia. It is conceivable that alterations may occur in the blood which possess little pathological significance for the human organism, but which are nevertheless capable of rendering the serum more toxic than normal when introduced into the circulation of rabbits This does not, however, seem a probable explanation of the phenomenon of augmented serum toxicity, and is especially at variance with the fact that our uræmic serums have, in some instances, exhibited very striking toxic properties when introduced into dogs and monkeys, which do not possess the peculiar susceptibility to normal human serum that is observed in the case of rabbits. It is much more rational to regard the increase in the toxic properties of the blood in certain, if not in all, cases of uræmia as evidence of a toxæmia, which is in some way connected with the symptoms of the uræmic state. It is possible that this toxæmia is distinctive of uræmia and always of the same character, but there are certain differences in the behaviour of different serums which make it likely that the toxæmia is not always the same. It is, moreover, certain that the toxic properties of the blood are augmented in conditions not uræmic in nature, for example, in acute lobar pneumonia, in scarlet fever, etc.

Urea being by far the largest and most important constituent of the urine and representing the terminal product of proteid metabolism, it is not singular that this substance should have been for a long time regarded as the main factor in the production of uræmia. It is thus of the highest importance to determine the actual relation of urea to uræmic states. The conclusions reached by me in reference to this relation are based upon a considerable number of determinations of urea in the blood of uræmic persons, of persons with other pathological conditions than uræmia, and of entirely normal persons. Many of these observations were made upon blood drawn during life, but these were supplemented by others upon post-mortem blood, after it was demonstrated both in man and in animals that the urea content of ante- and post-mortem blood corresponds closely in the case of blood taken from well preserved bodies. In addition to making seventy

observations on the urea of human blood, an endeavour was made to determine to what extent chemically pure urea possesses toxic properties. The results of these studies may be briefly stated as follows:

(*a*) In a small proportion of typical cases of uræmia, characterized by the occurrence of convulsions, the urea content of the blood was found to be well within the normal limits, notwithstanding that in these same cases the blood serum was distinctly more toxic than normal. It is plain that in these cases there is no ground for looking with suspicion upon urea as a factor in producing symptoms.

(*b*) In the majority of cases of uræmia, especially in those cases in which the secretion of urine has for a long time been scanty, the urea of the blood was distinctly increased, this increase sometimes reaching to 5 or 10 or even 20 times the normal urea content. It is, however, a very striking fact that many cases of chronic nephritis were found to be characterized by a markedly excessive urea content, even where there were no symptoms that would ordinarily be called uræmic. This is merely a confirmation of an old observation by Bright and Christison which has not received the attention which it deserves. Among the cases in which the urea was increased in the absence of typical uræmic symptoms were 14 cases of acute lobar pneumonia with fatal termination. These cases make it clear that renal inadequacy is a feature of many fatal pneumonias. Whether such inadequacy is to be considered uræmic in the absence of the usual symptoms of uræmia will be considered later.

(*c*) Experimental studies upon dogs and monkeys show that pure urea is toxic when infused intravenously, but only when very large quantities are employed, *i.e.*, quantities equal to many times the daily urea excretion of the animal. The symptoms produced by such infusions are fairly constant in dogs, and consist in initial slower and stronger heart action, copious diuresis, diarrhœa, contraction of the pupils, irregular fibrillary contractions of the muscles, and finally general and severe tonic or clonic spasms and death. If we make the bold assumption that in human nephritis the susceptibility of the nervous system to the influence of urea is similar to that observed in dogs, we would expect convulsive seizures to arise in man when the urea content of the blood reaches about .5 per cent. It was found however, that in many of the cases of human nephritis, in which convulsions occurred, the percentage of urea was considerably below this point, while in a few cases in which this percentage was much exceeded, convulsions were absent.

It is, of course, obvious from the foregoing facts that urea does not play a necessary part in the causation of the symptoms of human

convulsive uræmia. This does not, however, prove that the accumulation of the urea in the blood in large excess is of little importance. There is good evidence that such an accumulation points to a considerable degree of degeneration of the secreting epithelium, and the degeneration which permits the storage of urea, permits the storage of other constituents of the blood, including sodium chloride, potassium salts, nitrogenous extractives, and possibly a toxic proteid substance. It is partly on account of this multiplicity of substances retained in the blood at the same time with urea that we are unable to fix more definitely on the part which urea plays as a toxic substance. It is on the whole very likely that urea in conjunction with the accumulation of other substances in the blood, as the result of renal insufficiency, exerts an influence in the production of uræmic symptoms—especially uræmic vomiting and diarrhœa. The urea of the blood has been greatly increased in all the instances of uræmic vomiting and diarrhœa that I have had an opportunity to study.

It is desirable to indicate here that the customary determination of urea in the urine in cases of nephritis gives no more indication of the quantity of urea in the blood than does a mere record of the volume and specific gravity of the urine passed by such patients, and that it is hence an unnecessary procedure. If the kidneys are incompetent a large reduction in the urea excreted is indicated sufficiently by the reduction in the total solids, this being expressed by the volume and specific gravity. If there is only a moderate daily reduction in the urea excretion this cannot be discovered by the ordinary methods used. To determine this it would be necessary to keep a daily record of the nitrogen taken into the body, of the nitrogen of the urine and of the fæces, and also of the body weight. It is easy to see how, in the course of a few months of mild renal incompetency, the urea of the blood would increase enormously if the kidney lagged only to the extent of a few grams of urea daily—too small an amount to miss by ordinary examinations. It is no exaggeration to state that for practical purposes the consideration of the volume and specific gravity of the urine yields all the information that can be obtained by determining the urea of the urine. What we really require is an estimate of the urea of the blood in our nephritic patients, and this is entirely practicable, for only a few cubic centimetres of blood are necessary for this purpose. I have no doubt that this procedure will in time be frequently employed, as the urea content of the blood is a most important indication of the competency or incompetency of the kidneys.

In recent years there has been some disposition to regard the

extractive substances as the cause of uræmic symptoms, but the evidence in support of this view has never been strong. The results of a personal study of this question may be briefly referred to. The extractives of the blood, that is, the substances which can be extracted by means of ether and alcohol, were determined in more than one hundred instances, including normal human and dog's blood, blood from nephritis with and without uræmic symptoms, from septicæmia, acute lobar pneumonia, etc. It was found that there is no definite relation between uræmia and the quantity of extractives in the blood.

In general the extractives are somewhat increased where the quantity of urea is increased, but there are cases of uræmia where the extractives are apparently normal in amount, and there are cases which would not usually be classed as uræmic where the extractives are markedly increased. The evidence indicates that while extractive substances in excess cannot be regarded as entirely harmless for the organism, they certainly cannot be looked upon as playing other than an auxiliary part in the production of uræmic symptoms. In this connection it may be stated that Dr. A. J. Wakeman, at my request, made a series of laborious observations on the blood of uræmic patients with the use of the Otto-Stas method, for the purpose of isolating any alkaloidal substances which might exist there. The injection into guinea pigs of the material recovered by the Otto-Stas method yielded wholly negative results.

The conclusions that have been stated regarding the extractives of the blood are applicable to the potassium salts theory of uræmia, which was originally advanced by Felz and Ritter, and which constitutes a most instructive chapter in the history of theories of uræmia. Numerous observations made by me confirm the statement of Horbaczewski that the content of potassium salts in uræmic blood may be quite normal in amount. This seems to be especially true of the blood of puerperal eclampsia. These salts are, however, distinctly increased in many instances of uræmia, but apparently never enough to make them wholly responsible for grave nervous symptoms. The potassium theory as an *exclusive* cause of uræmia has recently been revived in France by Charrier, but upon wholly insufficient grounds. It may be said at present that, while the potassium salts cannot be considered to play a leading part in the production of uræmic symptoms, their presence in excess in the blood must be regarded as a possible factor in precipitating symptoms of intoxication.

The ammonium carbonate theory of Frerichs, once so popular, has now only a historical interest and need not be discussed here. An allied hypothesis has, however, been suggested, namely, that the cause

of uræmia is the presence in the blood of the ammonium salt of carbamic acid—ammonium carbamate. The recent investigations of Hahn Pawlow, Massen and Nencki render it probable that urea is formed in the liver by the dehydration of ammonium carbonate, and this fact has led some physiologists to suspect that the highly toxic ammonium carbamate may be responsible for uræmic states. This view appears to me to be at variance with the following facts:

1. In watery solution ammonium carbamate is very unstable and is rapidly converted into ammonium carbonate. We know, however, that ammonium carbonate does not occur in uræmic blood in sufficient amount to produce symptoms, and usually cannot be found at all.

2. The toxicity of uræmic blood is not lessened by dialysis, as it would be if the toxicity depended on a diffusible ammonium salt; nor does the diffusate contain ammonium.

3. The urine of uræmic patients does not necessarily contain an increased proportion of N. of ammonia, as it should do if the synthesis of urea were impaired. On the other hand, in liver diseases in which there is extensive parenchymatous destruction, the N. of ammonia may be greatly increased, even in the absence of uræmic symptoms.

Owing to the instability of ammonium carbamate its isolation from the blood is impracticable, and inferences as to its occurrence there depend chiefly on indirect evidence. The conclusion seems justified that such knowledge as we possess does not support the supposition that ammonium carbamate is concerned with the production of uræmic intoxications.

Before passing to the more constructive consideration of the uræmic problem, it is proper to make brief reference to two widely different theories of the nature of uræmia. One of these is the celebrated hypothesis of Traube that renal disease causes thinning of the blood plasma, hypertrophy of the left ventricle and excessive arterial pressure. If the arterial tension is increased beyond a certain point or the plasma of the blood becomes further thinned, œdema and anæmia of the brain are produced and uræmic symptoms result. There are fatal objections to this theory. These are: 1. That there may be marked cerebral symptoms without arterial tension. 2. That the specific gravity of the serum is often normal in typical uræmia. 3. That there are uræmic patients in whom neither cerebral anæmia nor cerebral œdema are found at autopsy. 4. That a marked degree of anæmia of the brain and of œdema is occasionally found in the absence of all symptoms resembling uræmia.

It is, however, clear from clinical study that there is often a close association between certain uræmic symptoms, especially convulsions

and dyspnœa and high arterial tension. Nor is there any doubt that when we reduce excessive vascular tension by means of vaso-dilators, such as nitro-glycerine, we often relieve the symptoms in the case of dyspnœa, sometimes in a striking degree. At present it appears probable that the high arterial tension of uræmia is due to the action of toxic material in the blood. It is not at all inconsistent with this view that variations in the circulation of the central nervous system should influence, in important ways, symptoms which, like dyspnœa, are of central origin.

Although we cannot accept the theory of Traube as advanced by him, the appearances observed in the central nervous system in persons dying of uræmia[1] (especially the loss of chlorophyllic substance seen in nerve cells) indicate that mechanical conditions, such as local anæmia, congestion or œdema, have been operative in damaging the nerve elements. It seems probable that these conditions are not primary, but depend on toxæmic states.

Another theory of uræmia which cannot be passed by, is that of Brown-Sequard, who holds that the kidney elaborates an internal secretion which is essential to health, and the suppression of which is largely responsible for the phenomena of uræmia ; the accumulation in the blood of toxic substances which should be excreted by the urine having little or no influence on the causation of these phenomena. This conception of uræmia rests mainly on the alleged fact that the injection of kidney extract into the circulation of a nephrectomized dog causes the temporary disappearance of uræmic phenomena. The evidence which has been advanced to establish this fact must be regarded as insufficient. Thus the observation of Brown-Sequard that the injection of kidney extract causes an increase in the muscular power of nephrectomized dogs, rests on a small number of experiments which appear neither to have yielded decided results nor to have been subjected to careful control, and Meyer's contention that the injection of renal extract gives marked relief to the dyspnœa of double nephrectomy likewise rests on a small number of observations that seem distinctly to call for proper controls. Nor can we place much reliance on the claims of Teissier and Frenkel, in a recent publication, that the injection of a few cubic centimeters of renal extract in the human uræmic subject is capable of rendering a hypotoxic urine hypertoxic by stimulating the elimination of toxines through the urine at the same time that the symptoms of uræmia are ameliorated. Consider-

[1] These changes are not by any means distinctive of uræmia, but occur in a variety of conditions. According to Dr. James Ewing they are best seen where the nerve elements have been subjected to pressure, as in cerebral hemorrhage.

able personal experience makes me highly skeptical as to the propriety of our drawing inferences as to the condition of the blood from the effects of intravenous infusions of urine in animals. A very obvious and serious gap in the experiments of Teissier and Frenkel is the absence of observations on the toxic salts ingested with the food and eliminated with the urine, the toxicity of the urine, both in health and disease, being largely dependent on its potassium salts. Future investigations may show that the kidney elaborates an internal secretion, but at present we are justified in taking the position that the observations now relating to this question do not help us in explaining the pathology of uræmia.

Passing now to a consideration of the clinical types of uræmia with a view to the discussion of their pathology, it is desirable first to make reference to the phenomena of double nephrectomy in dogs and their relation to human uræmia of obstructive origin.

The alterations in the composition of the blood that are entailed by double nephrectomy are of the greatest interest in the study of the pathology of uræmia, for they necessarily represent the results of the most extreme degree of renal incompetency *per se* and without complicating factors such as are commonly present in human uræmia. The following description of the symptoms and pathological alterations incidental to experimental uræmia, is based on a series of 10 successful cases in dogs, as well as on cases in the pig and rabbit—and also upon a number of instances in which the ureters were tied upon both sides. It may be stated at the outset that the symptoms were essentially the same in the case of double nephrectomy as in ligation of the ureters. These symptoms consist, in a typical case, of moderate prostration following the operation, of repeated vomiting[1] sometimes associated with diarrhœa, of slow and deep respiration, of slow, full and high tension pulse and, not rarely, of fibrillary twitchings. In only one instance did true convulsive seizures occur. Death is usually preceded by a period of drowsiness or actual coma. In none of my animals was the operation survived more than four and a half days, and most of them lived less than three days. In cases unaccompanied by infection the temperature is generally one or two degrees below normal for one or two days before death.

A considerable number of observations have been made by me to determine whether the blood of nephrectomized dogs is more toxic to rabbits than the blood of normal dogs; or, to put it a little differently,

[1] The vomiting referable to the removal of the kidneys must be distinguishable from that which results from peritonitis accompanying accidental infection in these cases.

to determine whether the experimental uræmia of double nephrectomy is comparable with human uræmia of the convulsive type as regards the toxicity of the blood. There can be little doubt that this is a most important question in the pathology of uræmia, and I regret that it is not possible for me to make an unqualified statement in regard to it. Owing to the crudeness of our methods of studying the toxic properties of the blood, it is not possible to detect moderate deviations from the normal toxicity. It can, therefore, only be said that there does not seem to be a marked difference in the toxic properties of the blood within 48 hours after nephrectomy as compared with the blood of the same animal previous to nephrectomy, but that the toxicity of the blood seems to be increased in dogs that live a longer period.

As regards the changes in the chemical composition of the blood, our information is much more positive. We know, for example, that the urea of the blood is remarkably increased after double nephrectomy —often reaching ten times the normal percentage at the end of three days. The extractives are also distinctly increased. A moderate increase in the total salts of the blood is probably a regular feature of the blood of nephrectomized animals. The potassium salts may be somewhat increased, but on the other hand may not be appreciably changed. The total proteids undergo no alteration in amount. A very interesting feature of the blood has been the marked increase in fibrin which was noted in a number of the nephrectomized dogs. This observation, though one of much interest if confirmed, has not yet been subjected to the controls which are necessary to establish it as a fact, for a very definite source of error remains to be eliminated. This consists in the fact that a part of the increase in fibrin noted after nephrectomy may be due to the bleeding which was practised several days before nephrectomy for the purpose of establishing a basis of comparison before and after operation, for it is known that the fibrin of the blood is increased by bleeding.[1]

In order to be able to compare the symptoms of double nephrectomy with the obstructive type of human uræmia, the cases of

[1] Since this paper was read I have succeeded in several instances in performing double nephrectomies and ureter ligations without losing more than a few c.c. of blood, through hemorrhage. All these animals have shown a doubling of the normal fibrin content of the blood after a few days. A dog subjected to laparotomy without nephrectomy, but with a moderate loss of blood, showed no increase in the fibrin content of the blood.

These observations seem of especial interest in connection with the altered toxicity of the blood after nephrectomy, but other sources of error remain to be eliminated before the increase in fibrin can be positively attributed solely to the suppression of renal functions.

prolonged anuria from obstruction accessible in literature were subjected to analysis. Of the 41 apparently reliable cases in which anuria lasted four days, 35 occurred in males. This striking difference in sexual incidence is probably explained by the nature of the obstruction to the escape of urine. In 14 of the 21 cases in which an autopsy was made the ureter or pelvis of the kidney was obstructed by a calculus, on one or both sides, the obstruction thus created being the cause of the anuria. I have been unable to find the record of a case in which anuria in a female was due to obstruction of the ureter or pelvis by a calculus. Of 36 cases in which there was either absolute anuria (if we can trust the histories) or in which only an insignificant quantity of urine was passed, the condition in 11 cases lasted more than 4 days and less than 7, in 18 cases lasted from 7 to 14 days, and in 7 cases lasted longer than 14 days.

Although the records are not wholly satisfactory, they serve to bring out clearly some important facts regarding the symptoms of obstructive uræmia. It is interesting to note that in seven of our forty-one cases it is definitely stated that no uræmic symptoms occurred, although some of the cases were of considerable duration (5, 5, 6, 7, 8, 9 and 11 days). Although it is not unlikely that some of the unobtrusive indications of uræmia were overlooked in these cases, it is fair to suppose that there were no well-marked uræmic symptoms. It seems clear that it is the rule for uræmic symptoms not to begin for several days after the commencement of the anuria. In a number of cases more than a week elapsed before pronounced indications of uræmia began. In twelve of the forty-one cases it is noted that vomiting was present at some period of the anuria. In one case (that of Russell, lasting twenty days) it is said that vomiting was present from the beginning. Diarrhœa does not appear to be so frequent a symptom as vomiting. It was noted in only six cases. Headache was described in only six cases. Insomnia, with restlessness, was observed in several instances, and may be present from the beginning. Muscular paralysis was not recorded in any of the cases, although a considerable degree of muscular prostration was repeatedly observed, and is probably a relatively early symptom in most instances. Pronounced delirium was a rare symptom. General convulsions is another uncommon symptom, having been noted in only five of the forty-one cases. Twitchings of the muscles, not sufficiently wide in range to constitute convulsions, were observed in eleven cases. According to Roberts this is a highly characteristic symptom of obstructive anuria. As regards the state of the mental faculties it seems safe to say that death is usually preceded by drowsiness, if life lasts more than

a week, but that the patient may in most instances be roused at any time.

In four cases a urinous odor of the breath was noticeable and in one of these the skin also had a urinous odor. In one instance the breath is described as having an ammoniacal character. In one patient, not included in the collection, the suppression lasted four days and the skin of the neck and face was covered by crystals of urea. An important clinical feature of obstructive uræmia is that the temperature is seldom elevated. In only one case is there a record of any fever, and in this the rise was slight. It is clearly the rule for the temperature to remain normal throughout or to be a little subnormal during the last days of life.

On comparing the symptoms of these two sets of cases, the human obstructive uræmia and the experimental uræmia following double nephrectomy or bilateral ligation of the ureters, several important resemblances become apparent. Thus vomiting is an early and frequent symptom, while diarrhœa, though not rare, is distinctively less common. In both groups of cases marked muscular prostration is usual from the beginning. Occasionally, however, there is early restlessness. Indications of delirium are absent in the experimental as in the human cases and paralyses have not been observed. In the terminal stage, fibrillary tremors are common in both the human and the canine cases, while general convulsions are exceptional. Terminal coma may occur in either group, but consciousness can usually be aroused at any time. An important clinical resemblance lies in the fact that the temperature is either normal throughout or slightly subnormal. There are, however, some points of difference. Thus, a patient with both ureters obstructed may live more than two weeks, while a dog with both ureters tied or with both kidneys extirpated lives less than one week. We can hardly attribute this difference in the duration of life to the shock of operation. It may depend on the activity of the skin in man. The ammoniacal breath of human patients depends doubtless on the decomposition of urea in the gastro-enteric tract and the odor of the skin arises from the decomposition of urea in the sweat. It may happen that a greater accumulation of urea occurs in the blood in man than in the dog, owing to his longer survival, and that this occasions the excretion of urea by the gut in the case of man. Notwithstanding these clinical differences, it seems probable that the pathological conditions which are responsible for the symptoms in nephrectomized dogs are essentially those that are responsible for the symptoms of obstructive uræmia—namely, the accumulation in the blood of urea, extractives, inorganic salts, and

perhaps of a toxic proteid material the nature of which is at present unknown.

Coming now to the consideration of other types of human uræmia, we find ourselves upon uncertain ground when we try to bring the various clinical phenomena into relation with the pathological state or states which constitute their basis. This is because the pathological knowledge which we possess is still exceedingly meagre and probably inadequate to form the basis of a permanent pathological classification of the different combinations of systems which we call uræmic. There are, however, certain facts, some of which have already been alluded to, that seem to me to help us in the interpretation of the phenomena of human uræmia, and to these I wish to direct your attention.

There is a well recognized group of patients with chronic nephritis whose leading characteristics clinically are high arterial tension, dyspnœa and slight albuminuria, and sometimes headache. Although the kidneys of such patients present considerable variations in their gross character, there is in all cases widespread degeneration of the secreting tubules, fibrous changes in the tufts, and a distinct increase in the intertubular connective tissue. Cases of this character are often benefited by venesection (at least temporarily) and it has thus become possible to obtain the blood for study in a number of instances As already stated, it is not possible to say whether or not the serum from such patients is regularly more toxic than normal, although it appears as if this were the case in some instances at least. It is usual in these cases for the blood to contain an increased percentage of urea, thus affording a positive indication that the kidney is not wholly competent to perform its excretory functions. Cases of nephritis of this type may be the distant consequences of infection, but there is no reason to think that pathogenic bacterial products are present in the blood at the period when these cases run a chronic and entirely afebrile course. The only obvious pathological condition of the blood that is likely to be connected with the characteristic exacerbations of dyspnœa and the increase in arterial tension, is the retention in the blood of constituents that should be excreted, perhaps including an unknown toxic proteid material. In other words (leaving aside the fact that the water of the plasma may be increased in such cases) the condition of the blood in the cases described is probably analagous to the condition which was described as characteristic of double nephrectomy, and which, in all likelihood, is the basis of human obstructive uræmia. At least this much is certain—in the three different conditions which we have considered, double nephrectomy, obstructive uræmia and chronic nephritis, with high tension and uræmic dyspnœa—there is an

actual retention of urea in the blood and not improbably an increased toxicity of the blood due to a proteid constituent. It is, of course, obvious that there are clinical differences between human obstructive uræmia and the dyspnœic type which this pathological conception does not explain. We must, however, remember that in the one case we have to do with an acute condition arising sometimes in persons whose vascular system is not markedly altered, while in the second case the toxæmia is a chronic state arising in a person who, simultaneously, and for reasons not understood, has developed cardio-vascular fibrosis. It is possible that this cardio-vascular fibrosis plays a mechanical part in the production of dyspnœa in the presence of a uræmic toxæmia like that referred to.

In the course of the arterio-sclerotic type of chronic nephritis, with uræmic dyspnœa, etc., as well as in other types of nephritis, gastro-enteric disturbances, especially nausea, vomiting, and diarrhœa of an intractable character, are occasionally observed. It will be remembered that vomiting and diarrhœa are features of experimental uræmia from nephrectomy and of obstructive uræmia.

There can be no doubt that these symptoms are due to a retention uræmia in which urea, extractives, etc., accumulate in the blood in large excess and are finally excreted by the gastro-enteric mucous membrane, causing diarrhœa, and in which vomiting is caused by the action of these toxic substances upon the medulla. I cannot undertake to say whether the known retained constituents of the blood (urea, extractives, salts) are in themselves responsible for these symptoms or whether unknown substances contribute to determine these symptoms. There are several facts which are of significance in this connection. One is that the injection of urea into the blood eventually causes diarrhœal discharges containing urea. Another fact is that in every case of uræmia that I have studied in which uræmic vomiting or diarrhœa has been a feature, the blood has contained a marked excess of urea, etc. Again we find that vomiting and diarrhœa are characteristic symptoms both of obstructive uræmia and of double nephrectomy. We know that in the former cases crystals of urea may be found on the skin and that in the latter urea may be found in the intestine. Considering these facts together we cannot but feel justified in believing that the known retained constituents of the blood play a part in the production of the digestive symptoms of uræmia, possibly a leading part.

In the course of a small proportion of cases of nephritis, convulsions constitute an obtrusive occurrence. The convulsive seizures may form part of the history of almost any type of nephritis—of nephritis

with preponderant parenchymatous change to nephritis with extreme connective tissue alterations. In a certain number of cases the symptoms previous to the convulsive seizures have been those of the type already referred to, with high tension pulse, dyspnœa, moderate albuminuria, etc. In other words, this type of uræmia is liable at any time to become modified by spastic phenomena. It should be noted that in some of these cases, where convulsions are thus superposed, the temperature remains normal until the seizure, and is then only slightly elevated—not more than we might expect from violent muscular action. How do these cases differ pathologically from the high tension type of uræmia without convulsive seizures? At the beginning of this paper reference was made to the fact that the toxicity of the blood was found to be markedly increased in many of eighteen cases of convulsive uræmia and at least apparently increased in all. It was found that the toxic properties of the serum in this group of cases were more pronounced than in the non-convulsive group with high tension. Moreover, it was found that in some of these convulsive cases the urea was not increased beyond the normal percentage. In a very few instances the urea, the extractives and the potassium salts were apparently within normal limits. It is plain that if the convulsions in these cases are of toxæmic origin they must depend upon some other substance than urea, and it is not unlikely that they depend on the presence of the proteid substance to which the exaggerated toxicity of the blood appears to be due. There does not, however, appear to be any significant difference between the convulsive and the non-convulsive group of cases, the difference in the toxicity of the blood being probably one of degree rather than of kind. Again, the clinical facts lend support to the view that the pathological basis of the two sets of cases cannot be very different, for the spastic phenomena are often so slight as to constitute only fibrillary twitchings that recur infrequently and bring about no noticeable change in the condition of the patient. It may be that the presence or absence of these nervous phenomena is connected with slight variations in the degree of toxæmia or with temporary alterations in the circulation of the brain.

The evidence thus seems to favour the view that in the group of cases which has been discussed, the symptoms are dependent largely upon renal insufficiency and upon alterations in the blood that are secondary to this condition. It is important to realize that although a kidney may be competent to excrete urea so actively as to prevent the accumulation of urea in the blood, it does not necessarily follow that it is competent to excrete, or to transform and excrete other sub

stances which a healthy kidney would not permit to remain in the blood.[1]

It may be that further studies will show that the essential pathological element in the forms of uræmia already considered is the presence of the proteid serum poison to which reference has been made; although in the form of uræmia characterized by gastro-enteric derangements, the accumulation of urea, salts, etc., appears to be a regular and probably a determining factor.

An element quite different from simple renal insufficiency enters into many cases of uræmia, namely that of infection.

There is a small but suggestive group of patients who, after exposure to cold or wet, develop high fever, partial suppression of urine, albuminuria and perhaps hæmaturia, with headache, delirium and coma. The peculiarity of these cases is that the kidneys have previously been normal so far as can be determined by clinical methods. There seems little doubt that the cerebral symptoms in such cases of acute degeneration of the kidney or acute exudative nephritis are due wholly to the action of toxines and not to the retention of substances in the blood which are normally eliminated by the kidney.

These unusual but instructive cases appear to me to represent the type of uræmia most widely removed from human obstructive uræmia in its pathological basis. As might be expected, these cases retain their purely infective type only a short time, for the damage to the kidney soon leads to pronounced insufficiency and to the accumulation of urea extractives, etc., in the blood in marked excess. A condition analogous to that just described can be produced in monkeys by the subcutaneous injection of pathogenic bacterial filtrates.

In a considerable number of cases of chronic nephritis which have run an afebrile course there is a sudden development of fever, partial suppression with increase in the albumen of the urine and cerebral symptoms such as delirium, coma or convulsions. At autopsy the kidney may show the lesions of an acute nephritis grafted upon those of a chronic nephritis. Post-mortem cultures made from the blood and various organs frequently show the presence of pyogenic or other pathogenic bacteria. In short we have in these cases both clinical and pathological evidence of the occurrence of an acute infection. It seems reasonable to suppose that many of the symptoms which we call uræmic in these terminal cases are due to the combination of this infection with a pre-existing toxæmia due to chronic renal insuffi-

[1] The increase in the fibrin content of the blood which I have found in some cases of this sort is of interest in this connection, though its significance is still uncertain.

ciency. But such infections are by no means always terminal states. It has been shown by Welch and others that patients with chronic nephritis are especially susceptible to infection, and it often happens that a patient with chronic diffuse nephritis develops grave cerebral symptoms at the time of a trivial infection which causes a tonsilitis, a slight bronchitis or an otitis,—symptoms which we very properly look upon as uræmic, but from which there is apparently complete recovery.

Reference has already been made to the fact that the urea content of the blood was found to be almost regularly increased in persons dying of acute lobar pneumonia, in other words, that renal insufficiency for urea is a characteristic of fatal pneumonias. This observation suggests the question whether we are to regard a markedly excessive accumulation of urea in the blood as an indication of uræmia even in the absence of typical clinical indications of uræmia. I strongly incline to the view that we should extend our conception of the term uræmia to include every case of renal insufficiency for urea although well defined uræmic symptoms be wanting. It has been made clear that typical uræmic symptoms may arise in persons whose blood shows no increase in urea, but this fact does not deprive the accumulation of urea, salts, etc., of clinical significance ; it merely illustrates that the pathological basis of what is clinically termed uræmia is not always the same. It seems to me desirable that we should regard any toxæmia as uræmic which can be shown to depend on the incapacity of the kidney to perform the functions of a healthy kidney, whether these functions consist simply in the elimination of substances as they exist in the blood furnished by the renal artery, or whether they shall be shown also to consist in the transformation of certain elements of the blood previous to elimination.

Again it is only rational that we should recognize that the essential elements of a uræmic intoxication may exist without being present in such a degree as to cause obtrusive and typical uræmic symptoms. Or, to restate the fact in a different form, *we should recognize that there is such a thing as a latent uræmic intoxication.* Such a latent uræmia is probably present in many forms of disease, especially acute disease, such as pneumonia, where the kidney is the seat of lesions, aud in chronic nephritis. In the former condition it constitutes a complicating state.

The fact that such a toxæmia may be masked by associated conditions or may be in itself unrecognizable clinically does not prove that it is a state which exerts no influence in determining prognosis.

In conclusion a word must be said about the most obscure type of

uræmia—puerperal eclampsia. Efforts have been made to connect this state with the formation of toxic products formed by the chemical activities of the living cells of the embryo, with the absorption of toxic material formed in the intestine and with the accumulation of urea in the blood as the result of nephritis or of pressure on the renal vessels, but the efficacy of these supposed agencies still remains unproved.

My personal experience with puerperal eclampsia is limited to the study of the blood of six victims of this state.[1] In at least three of these cases the urea of the blood was not increased in percentage. It seems highly probable that the toxicity of the blood was distinctly increased in at least two of these cases. Of the other cases it cannot be positively stated that the blood was more toxic to animals than is ever the case with the blood of non-eclamptic puerperal women, nor, on the other hand, can it be stated that the blood was not more toxic than normal.

At the present time there is a controversy as to the toxicity of the blood of eclamptic women, which can be definitely settled only by numerous and very carefully conducted observations. Although there is thus considerable uncertainty as to whether an increased toxicity of the blood is an essential feature of puerperal eclampsia there is important indirect evidence of the existence of such a toxæmia. This consists in the presence of anæmic and hemorrhagic areas of necrosis in the livers of women dying of eclampsia.[2]

Schmorl, who first described these striking lesions, regards the thromboses of the capillaries and small periportal veins with which they are associated as dependent on the passage into the blood of placental elements and products of placental degeneration.

Flexner has succeeded in producing similar alterations in the liver by means of experimental intoxications, and there can be little doubt that we must regard the necrotic changes in the organs of eclamptic women as dependent on a toxæmia. How this toxæmia arises and how it is related to the toxæmias of nephritis already discussed remains to be discovered.

Although this sketch of the pathology of uræmic conditions, made from a somewhat personal standpoint, shows us to be in possession of a meagre fund of knowledge respecting the pathological basis of uræmia, we may confidently hope for further enlightenment from experimental pathology. It seems to me that future researches should have refer-

[1] The blood from these patients was obtained through the courtesy of the attending physicians of the Lying-in Hospital of New York.

[2] I have never met with these lesions in the livers of persons dying from other forms of uræmia than puerperal eclampsia.

ence especially to the following topics: The toxic properties of the blood of uræmic patients, the physiological and chemical changes induced in the blood by nephrectomy, and the influence of intoxications of intestinal origin upon the normal organism and upon organisms which are the seat of nephritis. That the state of bacterial activity in the intestine is capable of exerting an important influence upon uræmic conditions is suggested by the observation which I have made that the albuminuria of a dog with chronic nephritis can be strikingly increased by feeding with cultures from the stools of entero-colitis. It is also suggested by the exacerbation of symptoms which we sometimes observe clinically in human patients after gross errors in diet.[1] This relation deserves further attention, as it is of the utmost practical importance in chronic uræmias.

I had hoped to refer this evening to methods of treatment in uræmia, but am conscious of having already overstepped the limit of time imposed by reasonable usage.

[1] Nephritis and uræmia may also arise in children as a consequence of intense entero-colitis.

Clinical Reports.

INTESTINAL OBSTRUCTION FROM GALL-STONE.[1]

BY

GEORGE E. ARMSTRONG, M.D.

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I saw Mrs. A., 43 years of age, married, multipara, for the first time on Sunday, 10th April, 1898. She complained of nausea and vomiting, abdominal pain and constipation. Her previous health had not been good. At 18 years of age she suffered from acute inflammatory rheumatism, with endocarditis, resulting in mitral valve disease. For many years she had frequent attacks of hæmoptysis. She has had four living and four still-born children.

In the winter of 1896-7 she suffered from an attack of what her family physician diagnosed as appendicitis. At this time she was confined to bed for three months. She tells me, however, that the pain and tenderness during this attack were high up, more in the region of the gall-bladder than of the appendix vermiformis. Since then she has never been free from soreness in the right hypocondrium, aggravated by exercise and cold.

The present illness began with vomiting on the previous Friday, and had kept up almost continuously during Friday night and Saturday and Saturday night. She had taken of her own accord a dose of salts and two enemas of soap-suds, without much effect, as only one small stool had passed after the first enema. Notwithstanding medical treatment, and the stopping of food by the mouth, the vomiting continued during Monday and Tuesday. On Tuesday evening her general condition, which up to this time had been good, began to fail. The pulse became more rapid, the temperature rose to 100°F., the abdomen was perceptibly distended and there developed tympanies, with general abdominal tenderness and a most anxious expression of countenance. The vomited matter was of a green bilious character, and very abundant. At no time had it any fæcal odor.

I decided that I had to deal with an intestinal obstruction; that I had already done all that could be done by medical treatment, that my patient was entering upon a condition in which any operative measure

[1] Read before the Montreal Medico-Chirurgical Society, April 29, 1898.

would be hazardous, and that an exploratory incision, and subsequent treatment *secundum artem* of the condition found, would give the best chance of bringing about a relief of the symptoms.

I had her removed to the Montreal General Hospital and operated on the evening of Tuesday, the 12th April, 100 hours after the onset of pain and vomiting. Dr. Shepherd very kindly gave me his assistance.

I opened the abdomen in the median line, below the umbilicus. Distended and collapsed small bowel came immediately into view. After following the collapsed bowel for a short distance, the portion containing the stone came up from the region of the pelvis on the left side. After emptying the bowel by pressure, and protecting the field by gauze pads, an assistant grasped it on each side and I removed the stone through an incision in the long axis of the gut. The opening in the bowel was subsequently closed by a double row of continuous sutures.

The green bilious vomiting coutinued for 72 hours after the operation. Extract of belladonna was given continuously every four hours for a week to overcome the dilated condition of the bowel above the obstruction. The bowels did not move until the fourth day after the operation, notwithstanding the frequent administration of copious enemata and occasional salines. The patient is now quite well, eating heartily and passing a well formed stool each day.

I do not know that it is possible to differentiate obstruction by a gall-stone from that due to bands or a volvulus or internal hernia. A history of cholelithiasis would be very suggestive, however. In the present instance the history was of a previous attack of appendicitis. There had never been any jaundice observed. One would rather have expected to find strangulation by bands.

In a case of intestinal obstruction occuring subsequent to a definite history of recurring attacks of hepatic colic rendering it probable that gall-stone might be a likely cause, it would be a nice question to decide when to operate. The mortality in gall-stone obstruction, following the medical and expectant plan of treatment is, according to Mayo Robson, about 52 per cent., and if surgeons have not been able in the past to show a larger percentage of recoveries, it is probably because operations have been too long postponed. Operations done as a *dernier resort* will always be followed by a large death rate. It is remarkable what small stones have caused fatal obstruction, as shown by specimens in the London Hospitals. On the other hand some very large stones have been successfully passed. I should say that in every case of intestinal obstruction from gall-stone or any other un-

discoverable cause, the attendant was in duty bound to advise an exploratory incision as soon as the patient's general condition began to fail, and under no circumstances should a patient be allowed to drift along until even the smallest operative procedure would necessarily be attended by very great danger.

These large stones do not pass into the gut through the common duct, but ulcerate their way through from the gall-bladder into the duodenum or colon after an adhesive inflammation has united the two. I operated upon a case some years ago where the gall-bladder had become adherent to the colon underneath. The adhesions had not been very strong, however, as several stones were found lying free in the peritoneal cavity just beside the opening between the gall-bladder and colon.

Although intestinal obstruction from gall-stone is generally caused by the stone blocking the lumen of the bowel, yet there are other ways in which the same result is brought about. There may be lighted up a localized peritonitis, leading to obstruction from paralysis of the intestinal wall. Again, obstruction may follow from bands, and fistulæ, the result of gall-stone ulceration.

Lastly, one or two cases have been successfully operated upon where the obstruction was found to be due to volvulus resulting from the violent irritation and irregular peristalsis due to the presence of a gall-stone.

Mayo Robson speaks highly of the value of extract of belladonna given in doses of gr. $\frac{1}{4}$ every four hours. This drug may be of value in conjunction with morphia, in favouring the passage of a stone, and again after operation, in aiding the restoration of function in a bowel that has been for some time over distended.

LOBAR PNEUMONIA IN A CHILD AGED THREE, HIGH AND PROLONGED PYREXIA AFTER ALL PHYSICAL EVIDENCE OF THE PNEUMONIA HAD DISAPPEARED.

BY

James Stewart, M.D.,

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AND

D. C. McCallum, M.D.,

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The following case of pneumonia presents several features of more than ordinary interest. The course of the disease may be briefly summarized as follows:

A previously healthy child, aged 3 years, was suddenly taken ill on the 3rd of December, 1897. The general symptoms were those of an acute pulmonary affection.

On admission to hospital on the 4th of December, and on subsequent examinations, it was definitely determined that we had to deal with a lobar pneumonia of the left lower lobe. On the 6th day of the disease the temperature suddenly dropped to below normal, where it remained for about three days.

In the course of the next few days the physical signs of consolidation gradually disappeared, but the temperature began to present the features of a marked and characteristic septicæmic process. For a period of six weeks it varied from subnormal to 108°.

On several occasions the latter point was reached. In spite of the high pyrexia, the child took nourishment and stimulants freely, and did not appear to suffer particularly. He was bright and cheerful throughout his prolonged illness. When the temperature rose after the crisis, it was naturally thought that we had to deal with a pneumococcus pleurisy but repeated tappings proved negative. Repeated cultures from the blood were also negative, as was also Widal's test for typhoid. We were unable to discover any likely focus for the septicæmic process. There was no evidence of unusually delayed resolution or of any pleural, pericardial, peritoneal or meningitic complication.

C. H., aged 3, was admitted to the Royal Victoria Hospital on December 4th, 1897, complaining of pain in left side of chest (2), cough (3), sore throat.

History of Recent Illness.—From his mother it was learned that he had been well till Friday, 3rd December, when she noticed that he seemed out of sorts and said that the left side of his chest and neck were sore. That night he was restless and cried with pain in left side of chest. He also began coughing during the night. Cough was frequent and caused considerable pain. The throat was also painful during the night. No chill or rigor occurred.

Personal History.—Born in Montreal three years ago. Has always lived here. Has always been a healthy child. Except for an attack of acute lobar pneumonia, which involved the lower lobe of right lung in April, 1897, has never suffered from any disease.

Family History.—Father alive and well. Mother had pleurisy five years ago, but is healthy. Other children are well. No history of rheumatism or tuberculosis.

On admission patient was a well nourished child of average size. Visible mucous membranes of fair colour. Face flushed. Frequently unilateral flushing was noted ; the left cheek was principally involved. No herpetic eruption was present. Child assumed the dorsal decubitus and lay quietly, except when paroxysm of coughing ensued. The cough was hard and dry and caused considerable pain in left side of chest. He slept well and took nourishment in fair quantity. Temperature 103° ; pulse, 128 ; respiration, 60.

Respiratory System—Respirations were short and quick. (Respiration ratio, 2—1). There was no cyanosis of face or finger tips. At times expiration was accompanied by a short grunt. The cough was hard and dry and came on in paroxysms. There was no expectoration.

Anteriorly.—Expansion of chest was fair, but was decidedly limited at the right apex and infraclavicular region. Expansion behind at the apex was also diminished. Local fremitus could not be elicited.

Percussion note was impaired from apex to upper border of 3rd rib anteriorly.

Posteriorly, note was impaired to mid scapula in left side. Note over right lung was slightly hyperresonant, but otherwise normal.

Auscultation—Blowing breathing was heard over the whole of the dull area, and posteriorly a few dry *râles* were heard with expiration. Right lung, breath sounds normal.

Cardiac Vascular System.—Pulse 129, of good volume ; tension high ; regular in rhythm.

Heart—Apex beat visible and palpable in 6th interspace. Dulness was not increased. Sounds at apex normal, at base the second pulmonary sound was accentuated.

Digestive System.—Lips dry and covered with sordes. Teeth in fair condition. Tongue heavily coated on dorsum with yellowish fur Breath was foul. Throat, slight redness of left tonsil and left pillar of fauces. Left tonsil was slightly enlarged. Appetite fair. Thirst increased. There was no vomiting

Abdomen.—Skin hot and dry. Abdomen full but not distended. Neither liver nor spleen was palpable.

Locomotar System—Skin hot and dry. Face flushed unilaterally. No herpes on lips or nose. Vaccination mark seen on left arm. Subcutaneous fat present in fair amount. Muscles of good size and muscular power good. Bones and joints normal.

Nervous System.—Intelligence good. Mental state normal. Sleep rather disturbed. Child restless during both day and night.

Subsequent Events.—Condition was much the same with distressed respiration and cough till 8th December, when a drop in temperature occurred to normal from $104\frac{3}{5}°$. The cough was less troublesome and the child seemed somewhat better. The condition of the lungs was not changed, save that the blowing breathing was less distinct. On the 10th the patient was much brighter. Respiration 34. Cough less severe.

The temperature did not remain normal, but began gradually to rise, ranging from normal to $101\frac{4}{5}°$. The general condition was somewhat improved and the child was brighter, Respiratory rate was 28—30. Cough no longer present.

Examination of chest showed slightly impaired note from base of left lung to angle of the scapula, with weak voice and breath sounds. A needle was inserted on several occasions, but no fluid at any time withdrawn.

During the last week in December the temperature was very irregular, on several occasions reaching 108°. The general condition of the child did not suffer. He was bright and the mental state was normal. The Widal test was negative, as were also cultures taken from the blood on several occasions.

Throughout January the same irregularity of temperature was noted. The child lost in weight, but did not seem to suffer any inconvenience from the pyrexia. The urine on repeated examinations was normal.

Early in February the temperature became less elevated. The child rapidly gained in flesh. Appetite was excellent. Examination of chest showed that the dullness had entirely cleared up. He was discharged on 27th February, 1898.

INTUSSUSCEPTION IN AN INFANT, AGED 9 MONTHS—OPERATION—RECOVERY.

BY

FRANK R. ENGLAND, M.D.,

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MR. PRESIDENT AND GENTLEMEN,—The case which I venture to bring before the Society this evening has the following history:—Baby M., aged 9 months, was breast-fed until a few weeks ago, when nursing was supplemented by artificial feeding. The baby has never been ill until the present attack, and her nutrition has always been excellent. There is nothing in the family history showing any predisposition to bowel trouble. The present attack began at midnight December 15th, when the infant awoke, crying, as if suffering pain, and soon vomited: the pain was intermittent in character, and the vomiting recurred only a few times during the night and following day. December 17th, in the evening, the nausea, with occasional vomiting and tenesmus, increased, and a couple of blood-stained and slimy stools were passed. At midnight I was sent for, but happened to be out at the time, so Dr. George Fisk kindly saw the case for me. The symptoms then were indicative of intestinal obstruction: there was retching, with occasional vomiting and tenesmus.

December 18th, at 11.30 a.m., I saw the patient for the first time. The baby appeared to be very ill: the face was pale, drawn and pinched, the eyes were sunken, the pulse was small and rapid, 150 per minute; temperature, 99½° F.: there was almost constant retching, with straining at stool without effect: no abdominal distention. On palpation a distinct elongated tumor could be felt in the left lumbar region, just above the crest of the ilium. It was movable and yielding to the touch.

Diagnosis.— Intussusception.—Immediate operation was advised. The child was accordingly removed to a private ward in the Western Hospital, where, at 1.30 p.m., assisted by Dr. George Fisk, I did a cœliotomy, making a two-inch median incision below the umbilicus. On opening the peritoneal cavity two or more ounces of straw-colored fluid escaped. The small intestines were red and injected: a number of coils were allowed to escape from the abdomen, but were protected and kept warm while the tumor was being dealt with. The invaginated bowel was next seized and brought out through the wound.

[1] Read before the Montreal Medico-Chirurgical Society, April 1, 1898.

The intussusception was found to be of the ileo-cæcal variety; the cæcum had been swallowed by the ascending colon, the tumor increasing in size at the expense of the intussuscipiens or outer tube. The invagination was reduced without any particular difficulty by pressure from below the mass, combined with gentle traction on the ileum and cæcum; the adhesions being recent, were separated without damage to the bowel wall. The cæcum was much swollen, and at the point of greatest constriction was bloodless, and of an ashy grey color. The remainder of the cæcum, together with the ascending and transverse colon, was very red, with extensive extravasations of blood beneath the serous coat. The ascending, transverse, and upper part of the descending colon had been much dilated to receive the intussusceptum. The meso-cæcum and meso-colon were unusually long. It was thought advisable to remove the red and greatly swollen appendix, but, as the circulation was seen to be gradually returning to the blanched portion of the cæcum, the latter was fastened by suturing it to the parietal incision. Finally the small intestines were returned, the peritoneal cavity dried with sponges, and the abdominal incision closed without drainage. Little or no shock followed the operation. The patient came out of the anæsthetic quietly (A. C. E. mixture); no vomiting. The temperature, which was 104° F. at mid-day, or just before the operation, fell gradually, and at midnight was only 100° F.; the pulse, too, improved in character and became slower, dropping to 120 per minute. The bowels moved satisfactorily thirty hours after the operation, after an enema of glycerine and warm water, and they continued to act either naturally or by the aid of enemata once or twice daily. After the first twenty-four hours the child was allowed the breast.

December 28th.—Two sutures were removed, which were found to be cutting. There was also a small stitch abscess.

December 30.—The remaining sutures were removed. The incision healed by primary union.

January 1, 1898, fourteen days after the operation, the patient was allowed to be taken to her home, where I saw her on the following day, playful and perfectly well.

Remarks.—Intussusception may occur at any age, but 50 per cent. of all cases are said to occur before the age of 10 years, and half of these occur during the first year of life. It is the most common cause of intestinal obstruction in children. According to the statistics of Treves 70 per cent. of all cases terminate fatally. In the more acute cases death may occur in from one to two days from intestinal strangulation, with or without perforation and peritonitis. In the less

acute cases there is not complete obstruction of the bowel, but gangrene of the intussusceptun is very likely to occur, with possible perforation and septic peritonitis, causing death in from four to seven days in children, and in from three to four weeks in adults.

If these cases are to be treated with greater success in the future than they have been in the past, it must be through early recognition and more prompt interference. Treves says that when in an acute case days have been allowed to elapse, the prospect of success by operation is so slight that, so far as statistics at present indicate, it is better to leave the case to nature. Recovery is rare in those cases where reduction is very difficult or impossible, or where gangrene has occurred, making a resection of the bowel necessary. Charles Clubbe, B. M. J., November 6th, 1897, reports fifteen cases of intussusception, with seven recoveries. Three of his successful cases were seen early, and reduced by means of olive oil injections by rectum, and in only one of the remaining four cases was the bowel materially injured.

In my own case, where the operation was performed fairly early, the invagination was found to be extensive, and the wall of the cæcum barely escaped necrosis. A few hours' delay under treatment, say with opium, or by attempts at reduction by rectal injections, and I am satisfied that there would have been a less happy result.

PNEUMONIA, MALIGNANT ENDOCARDITIS OF TRICUSPID VALVE.[1]

BY

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Mrs. L., æt 40, was admitted to the Montreal General Hospital on March 25th, 1898, complaining of pain in the left side and difficulty in breathing. Two years ago she had an attack of pneumonia ; with this exception she has always enjoyed good health.

Her present illness began on March 18th, with a chill, lasting for 10 or 15 minutes, and followed by profuse sweating. She took to bed and woke up the following morning with severe pain in the left side.

Note on admission.—The patient is a fairly nourished woman, the face is flushed especially on the right side. The skin is moist and cool, the temperature 102.5°, the panniculus and muscles fairly developed. There is a short cough without expectoration, the respirations are 28 and accompanied by dilatation of the alæ nasi.

There is marked dulness over the lower lobe of the left lung (*i.e.* from a line running from the third spine to the lower axillary region), with blowing breathing and bronchophony over the dull area, and a few fine crepitations in the lower axilla.

The apex impulse is in the normal site, the sounds are normal, and there is no pulmonary accentuation. The pulse is compressible and of fair value, 136 on admission and 120 two hours later.

The tongue is thickly coated anteriorly, clean posteriorly. The abdomen is moderately full and tympanitic, but not rigid. Hepatic dulness extends from the 7th rib to the costal border, measuring 2 in. The spleen is not palpable, and its area of dulness not increased. The urine is acid, 1012, dark amber color, a large trace of albumen, and a few granular and hyaline casts.

March 28th. Crepitation is added to the tubular breathing on the left side. At the base of the right lung a small area of tubular breathing and crepitation, but with no obvious dulness. The patient is dusky, the pulse small and varying from 100 to 120, the temperature irregular, the highest point since the 25th being $102\frac{3}{5}°$, the lowest at 4 a.m. to-day 98.4°. Diarrhœa set in to-day, there being nine loose

[1] Read before the Montreal Medico-Chirurgical Society, April 27, 1898.

stools. At 3.55 this afternoon she had a rigor, the temperature rising to 104⅘°, lasting for five minutes, and followed by profuse sweating.

March 30. There was a slight rigor at midnight, severe headache, and followed by profuse sweating. the temperature rose to 104⅕°, and the pulse to 144 at 4 a.m.: ten minutes later the temperature fell to 102. She slept badly, had a dry cough, and the diarrhœa continues, being somewhat controlled by starch and opium enemata. A pleuritic to and fro friction is present at the right base; otherwise the physical signs in the chest are unchanged. The splenic dulness reaches the costal border, but the organ is not palpable.

April 2. Two rigors occurred yesterday, the rectal temperatures reaching 105⅗° to 106⅕°. Following and preceding the rigors the temperature fell to normal. During the high temperature, the pulse became very weak and rapid, 160 to 168, and the respiration very labored, increasing from 24 to 28 up to 40 or 44.

The lungs as before, and the heart, which has been carefully examined daily, presents no murmur.

April 3. Dr. Gardner examined the fundi and reports them normal. A culture from the blood shows diplococci and staphylococci. Prostration is very marked, the 2nd sound is feeble, the first accentuated. The pulse varies with the temperature from 104 to 170, and once fell to 80. The temperature is remitting, rising from 103½° to 106° in the latter part of the day, and failing as low as 99⅖° in the morning. The last rigor, there being five altogether, took place on the 3rd. A dry cough without expectoration continues, and there are from three to four stools daily.

April 8. Lies propped up in bed owing to dyspnœa. Complains of severe pain at back of left knee; nothing made out objectively.

April 13. Breath extremely offensive for some days. Examination by Dr. Birkett shows atrophic catarrh and ozæna.

April 16. Prostration during last few days has become extreme. Temperature 105° to 106° in the afternoon without rigors, the minimum temperatures being 102° to 103°. Yesterday and to-day temperature 105° to 106°. The pulse rapid, 124 to 170, and weak. The mind has been clear throughout. The lungs when examined yesterday still showed the same evidence of consolidation. The heart, which has been daily examined, has been normal. Diarrhœa, 3 or 4 stools daily.

Death took place at 2 a.m. on the 17th April, the temperature rising before death to 108°.

Autopsy by Dr. Wyatt Johnston, showed a very unusual condition of the heart, there being acute endocarditis confined to the tricuspid valve. This valve was covered with polypoid vegetations as large

as cherries, forming a cluster and having a general appearance analogous to condylomata round an orifice. The tricuspid orifice though somewhat obstructed by these vegetations, was neither dilated nor stenosed, the other orifices were of normal size. The mitral valve was very slightly thickened, but free from vegetations. None of the heart cavities were dilated. The character of the vegetations was peculiar. They were white, rounded and very firmly attached to the valve and had not led to destruction or perforation, their appearance being rather that of mural thrombi in the heart than usual vegetation. This made it appear as if the peculiar lesions in this case resulted from an antecedent right heart thrombosis. The auricular surface of the tricuspid was the part effected; the auricle itself being free except for a small thrombosis the size of a pea about one-half inch above the ring. Microscopical examination showed large numbers of large lancet shaped diplococci staining by Grams' method about twice the size of the pneumococcus, also a number of short coccus chains of four elements staining by Gram. The diplococci grew on blood serum and gave an abundant greyish growth; injections of the cultures into mice failed to kill them. It was suggested by Dr. Finley that they might be involution forms of the pneumococcus which had lost virulence during the chronic course of the case.

The spleen and kidneys showed extreme cloudy swelling, but neither showed emboli. On the other hand in the small branches of the pulmonary artery of both lungs, there were several areas of necrosis and softening surrounded by areas of pneumonia. In other parts of the lungs partly decolourised infarcts existed surrounded by pneumonic areas. Near the root of the lung were firm areas of interstitial pneumonia, the lung process showing different dates or recurrences of infection. The cultures from the lungs showed pneumococci, staphylococci, auris and streptococci; The thrombi in the lung arteries had the same white rounded appearance as the cardiac vegetations.

On the entry of the patient the case presented the typical picture of acute lobar pneumonia of a moderately severe type. It was not until the 11th day, when the rigor took place, that a complication was suspected, and after the second rigor I was strongly inclined to regard the condition as one of malignant endocarditis. This seemed to be the only explanation for the septic condition of the patient, and the preceding pneumonia also supported this supposition. The marked and early prostration was a striking feature and was a strong point in favour of this opinion. The spleen, which was of normal size on admission, was first noticed to be enlarged on the 30th and was in accord with a septic condition.

The case lacked the conclusive evidence of the development of cardiac murmurs and of emboli.

Although carefully examined daily there were no murmurs, and this was fairly well explained by the condition of the tricuspid valve which was competent, whilst the heart's action was doubtless too weak to generate a direct murmur, and beyond the evidence of cardiac weakness present in any severe septic state, there was no signs of any abnormality.

The limitation of the endocarditis to the tricuspid valve explained the absence of arterial emboli, which is such a marked feature of most cases of ulcerative endocarditis.

"OBITER SCRIPTA" II.

Casual notes from the Medical Clinic of the Royal Victoria Hospital.)

BY

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SOME FORMS OF HYSTERIA.

The protean manifestations of this malady have always formed a very large element in the statistics of disease ever since Plato first taught that the globus hystericus was induced by pressure of the uterus against the diaphragm, and others, coming later, believed the condition to be due to the existence of some new form of life existing in the human body. Within a very short period recently in our clinics, there have been numerous examples of the various forms of this malady, some, perhaps, rather unusual and worthy of more than a passing notice. Of these Dr. James Stewart has already made record of the coughing or barking girl, whose intermittent uproars have been perpetuated on the hospital phonograph. So also of the hysterical contracture of the arm and leg permanently, so far as we are aware, cured by means of hypnotism. Others admitted quite recently have well illustrated some of the characteristic varieties of motor and sensory disturbance, cases which are always of interest and which at times present some difficulties in diagnosis to those not much engaged in the study of nervous diseases. This applies naturally rather to the motor than to the sensory manifestations, inasmuch as the irregular distribution of the latter or its localisation to areas not corresponding in any way to definite series of nerve supply makes the diagnosis in most cases quite obvious. In either case, moreover, it is as a rule not difficult to detect other "stigmata diaboli" which help to elucidate the true nature of these affections.

A few not very uncommon examples are here noted, not because of their rarity by any means, but as illustrating in a group some of the various forms.

CASE I.

Hysterical paresis of the lower extremities with foot drop.

A man, 36 years of age, entered the hospital complaining of weakness in the ankles and difficulty in walking. He was a Canadian by birth, and had been variously employed as a machinist, baker and

bookkeeper. His habits had always been moderate, and apart from the usual diseases of children, he had had no maladies of importance : there was absolutely no specific history nor evidence of hereditary tendencies to disease in the family. Some three years before admission he had fallen, striking his head somewhat severely : as a result he was somewhat dazed, but did not lose consciousness for a moment. Shortly after this he complained of a "pins and needles" feeling in the forearms, a condition which persisted for months, and was soon followed by a severe pain in the back, which he described as intermittent and excruciating while it lasted. Two months after the accident, he complained for the first time of the difficulty in walking, due, as would be surmised from his description, to marked "foot-drop." On level ground there was but little difficulty in walking, while under other conditions he stumbled readily, and in order to lift his leg he was obliged to aid himself with his hands. Ever since that time, now more than three years ago, the patient has been more or less thus afflicted.

On entering the hospital he was seen to be in every way well nourished and apparently healthy, apart from the conditions of which he complained. His gait was the most characteristic feature ; the feet, during walking, were lifted high in the air, the toes pointing to the ground. On returning them to the ground when raised, the toes first came into contact with the floor, the heels later, and with a sharp thud. There was a most obvious effort in walking to lift the toes well above the ground, though at times the patient utterly failed, leaving them meanwhile to drag, with inversion of the feet. This condition was marked in both legs, though much more so in the left. A slight ataxia was likewise prominent.

Examination of the nervous system revealed good voluntary power in the muscles of the upper extremities, as also in those of the right thigh : the muscles of the left thigh, however, were distinctly weakened, as well as those of both lower legs. The condition was briefly as follows : Right leg, complete inability to flex the ankles, slight power to flex the toes ; extension fair but distinctly weakened. Left leg, absolute paralysis for extension and flexion.

The reflexes were throughout normal, except for some slight exaggeration of the plantar and patellar reflexes on the right side, and marked diminution of the patellar reflex on the left. *Electrical reactions* were normal Romberg's symptom was slightly present. *Co-ordination* and muscular sense were otherwise normal ; there was no disturbance of *sensation*. The *taches cerebrales* were well marked.

After a short stay in the hospital of three weeks, the patient was discharged, being slightly improved. Six weeks later he returned practically in the same condition. An effort had been made by Dr. Stewart to hypnotise him but with only moderate success. Complete paralysis was now evident in the flexor muscles of the left foot. There was no evidence of atrophy nor of advance in the condition in any other way whatsoever.

The treatment employed throughout was unsatisfactory, inasmuch as after his second sojourn he was again discharged unimproved.

The question of diagnosis in such a case is not a difficult one, resting as it does mainly between three conditions, peripheral neuritis, anterior poliomyelitis, and functional or hysterical paraplegia. The condition having lasted for so great a length of time without atrophy and with but slightly altered reflexes and a total absence of progressive changes, as well as the healthy condition of the muscles in their reaction to electrical tests, would be quite sufficient to exclude the anterior poliomyelitis, or any changes whatsover in the condition of the ganglion cells in the anterior horns of the spinal cord. Multiple neuritis, too, is readily excluded from the absence of all sensory symptoms in the lower extremities, both subjective and objective ; well preserved muscles, no atrophy, normal electrical reaction, the absence of any known cause, etc. The course and symptoms of the malady, moreover, would also render a transverse myelitis quite improbable. The mere fact that such a condition had gone on for three years or more without appreciable change in the nutrition of the parts, makes the diagnosis of hysteria absolute, and the prognosis could not be considered serious.

CASE II.

Hysterical paralysis of the lower extremities following each effort to walk a short distance.

The victim of this malady was, as might be expected ! a girl of about 30 years of age, who was admitted to Dr. Stewart's clinic because of inability to walk.

The first manifestations appeared some 7 years ago with dragging of the left leg, from which, however, she partially recovered for two years or more. The recurrence ensued, and in a graver form of the disease, the patient being quite unable to walk for one year. Partial recovery again took place, and the patient was in the habit of taking fairly long walks every week for several years.

The condition persisted thus till the middle of 1895, when she again became worse and remained almost constantly in bed from July, 1895,

to February, 1896. At this time marked weakness developed in the right leg, and the left became quite useless. Crutches were now employed till November, 1896, and since that period she had been fairly well till last year.

Her gait, as observed on admittance, was quite remarkable. Being held up by the nurse at first she would exhibit obvious efforts in beginning to walk, and progression was characterized by distinct shuffling and dragging of the dorsum of the toes over the ground with inversion of the feet: this was far more marked on the right side.

Although the first few steps were taken fairly well, until obvious weakness developed, each step was then succeeded by a weaker, till the patient fell into the attendant's arms. After a prolonged sojourn in the hospital the condition became gradually improved till by February, 1898, the patient left the hospital with complete use of her limbs.

The treatment was in the main directed on general principles, without the application of local remedies of any kind whatsoever.

CASE III.

Hysteria following operation for appendicitis; geometrical (glove and stocking) anæsthesia.

Among the less common forms of functional anæsthesia, though by no means a rare variety, is that affecting one or two extremities completely up to a certain well defined limit—such for example as the areas included in the whole forearm to the elbow—or the lower leg to above the knee—in other words, the condition described so aptly by French writers as glove or gauntlet anæsthesia and stocking anæsthesia.

A young girl who had successfully passed through an operation for appendicitis, complained two and a half weeks later of soreness in the right arm and leg, more particularly in the region of the elbow and knee. With this, there was numbness and weakness of the affected limbs. Examination revealed distinct paresis of both leg and arm, though without evidence of atrophy, or joint disturbance. Sensation, however, was quite absent over the whole forarm to a zone immediately above the elbow, while the same was found in the leg to just above the knee joint. In each case the limiting line was astonishingly well defined, and the anæsthesia of a general nature, *i.e.*, touch, pain and temperature. Furthermore, the skin was absolutely insensible to the faradic brush (electro-anæsthesia) and pin pricks would scarcely bleed at all, evidencing marked disturbance of the vasomotor system as well.

Examination elsewhere revealed no other evidences of hysteria except anæsthesia of the pharynx.

There was no history of lead intoxication.

The treatment now being adopted is directed to general improvement of her moral, mental and physical condition, with local application of the faradic wire brush.

CASE IV.

Hysterical tremor with marked affection of special senses.

In this instance there was no etiological factor discernible, there being no history of trauma or intoxications. The patient had suffered from several hysterical convulsions since three or four months, and later on developed a marked and coarse tremor, chiefly of the arms and hands—less so of the lower extremities. Even while lying quietly in her bed the arms and legs could be seen to tremble, often violently the oscillations always being coarse and rapid. At times there were distinct contractures of the arms and legs with variable degrees of paralysis.

The gait is uncertain—at times markedly ataxic and at others undertaken with comparative ease.

With this are other stigmata, such as defective color vision, lost taste and smell and distinct alteration in hearing. The pharyngeal reflex is absent. Sensation to pain is variable from time to time, though the tactile and thermic sense seem present normally.

Notes on Treatment.

UNDER THIS HEADING ARE INCLUDED BOTH ORIGINAL SUGGESTIONS AND THE ENDORSATION OF METHODS ALREADY PUBLISHED.

Appendicitis.

In the treatment of appendicitis I have found the local application of ice more satisfactory than hot poultices or fomentations, in relieving the pain and limiting the inflammation. It may be applied by means of a Leiter's coil, or in a rubber bag suspended over the patient in such a way as to partially take off the weight, or the ice may be pounded up and rolled in a large towel and then laid over the region of the appendix.

I believe that fewer cases would come to require operation if cold instead of heat were more generally used as a local application.

Geo. E. Armstrong.

Simple Anæmia or Chlorosis.

Iron in some form seems to influence the formation of hæmoglobin more than any other drug.

The older and plainer preparations of iron seem to be falling into disuse, but a prescription which has been given in a large number of cases under close observation, with much satisfaction, and scarcely ever with any sign of untoward effects, is as follows :

℞	Tincturæ Ferri Perchloridi	ʒ iv
	Acidi Hydrochlorici diluti	ʒ iv
	Glycerini	℥ i
	Aquæ ad	℥ vi

m

Sig: ʒii three times daily in water, after food.

The dose of the tincture of iron is gradually increased up to twenty, thirty or forty minums and even higher, during the regular menstrual period the treatment is suspended. Care of the teeth is always enjoined while this mixture is being used. The use of the glass tube is recommended, and after each dose the mouth should be washed out with some alkaline solution.

W. F. Hamilton

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Recurrent Idiopathic Pneumothorax.

J. McGee Finny, M.D., of Dublin. "A case of recurrent idiopathic pneumothorax without effusion, ending in recovery."—*The Dublin Journal of Medical Sciences,* April 1, 1898.

Dr. Finny reports to some length this very interesting and certainly very rare type of case of pneumothorax. The subject of this condition was a young man, aged eighteen, previously in good health, who, on getting up one morning felt a heavy weight across his chest, and on going to work was compelled to return home, because of a violent seizure of pain in the chest and dyspnœa. In the patient's previous history there was absolutely no event or condition to which the present attack could be referred. The pain and dyspnœa lasted but a day.

The physical examination of the chest gave the characteristic signs of pneumothorax of the left side, including slight amphoric breathing, tinkling, faintly heard, and the *bruit d'airain* beautifully demonstrated. Succussion signs were absent. The signs present gradually disappeared, the *bruit d'airain* being lost at the end of a fortnight, while the heart is reported in normal position at the end of three weeks. The temperature and pulse rate were practically normal throughout, and the other functions undisturbed. During the progress of the case a double friction sound became audible over the lower portion of the sternum and synchronous with the heart sounds, and increased on inspiration and diminished on expiration. Doubt arose as to the origin of this friction sound, but Dr. Finny considered

it as exo pericardial in origin, arising from the left parietal pleura. The patient having entered the hospital on November 6th, was discharged December 17th, looking well and healthy, the respiratory and vocal sounds being fairly audible over the back and axilla, while the left side measured an inch less than the right. He returned to his work as a stableman, and two weeks afterwards, while engaged in lifting with a fork, he felt a little "crackle" at the top of his left chest. The following morning, December 31st, while getting out of bed he experienced the same pain as before with dyspnœa and weakness to the degree of fainting. When examined five days afterwards, the same physical signs were found as in November. He remained in the hospital for four weeks, and was discharged again while the process of air absorption was yet incomplete. On March 4th the heart was in its normal position. Vocal fremitus and resonance were feeble on the affected side, and respiration was not audible under the clavicle where the percussion note was somewhat tympanitic. Dr. Finny thought that, while the lower part of the chest was well filled by the expanding lung, the upper part still contained some air in the pleura.

In the review of this Dr. Finny calls special attention to the following physical signs :

1. The existence of amorphic respiration in the earlier periods when the aperture was closed.

2. The metallic tinkling audible for ten days without other satisfactory signs of the presence of a fluid.

3. The friction sound audible over the lower left sternal region, synchronous with the movements or the heart.

After referring to writings of West, Allbutt F. de H. Hall and Brünnicke, Dr. Finny states that from the foregoing facts and references he is able to deduce the following conclusions :

1. That simple or idopathic pneumothorax is a very rare disease of the lungs and pleura.

2. That a repetition of the disease in the same lung is of still greater rarity,

3. That in a very small number of cases the entrance of air into the pleura—to stretch it to its utmost limit—does occur *without any effusion* of fluid, and this even may happen the second time in the same lung.

4 That the absence of fluid renders the disease less fatal than when air and fluid has effused.

5. That the presence of air in the pleura may occur without any febrile or constitutional disturbance.

6. That in the face of such possibilities we should be cautious as to giving too grave a prognosis when evidence of a ruptured lung and pleura are present, and particularly so when there is no previous disease.

8. That the tendency of such cases is towards spontaneous recovery and in the absence of urgent symptoms calling for relief, it is wiser not to employ surgical means to let off the effused air.

Serum Treatment of Diphtheria.

C. E. Michael, M A., M.B., of Homerton. "Complications attending the serum treatment of diphtheria."—*The Practitioner*, April, 1898.

Under two parts Dr. Michael discusses this subject: 1. The effect of antitoxin upon the incidence of those complications which commonly occur in diphtheria and: 2. The effect of antitoxin in producing complications peculiar to those cases treated with it.

His information for the first part is derived from the reports of the Metropolitan Asylums Board for 1895 and 1896, and includes all cases treated with antitoxin from six fever hospitals, while that for the second part is drawn from the same reports, together with a record of personal clinical experience and observations of cases, with three exceptions, under his own care in the wards of the Eastern Fever Hospital.

1. The question, whether antitoxin of itself effects in any wise the incidence of ordinary complications, and if so, in what direction, is both a difficult and an important one. Dr. Michael, facing the difficulty, remarks that in the year 1895 and 1896 all the ordinary complications, except nephritis, are increased over the previous year 1894, during which no antitoxin was used, and that the increase is most marked in cases of albuminuria and paralysis. He believes, however, that this increase may be more apparent than real, since any method of treatment, tiding the patient over the acute stage of the disease leaves him more exposed to complications, and, since it would appear that the average type of the disease of 1895 was more conducive to certain complications, and further, the increased vigilance of those reporting the cases since the antitoxin treatment may have swelled the statistics of complications.

Renal inflammation as a result of antitoxin treatment has not been established.

2. *The effect of antitoxin in producing complications peculiar to those cases treated without it.*—There were 4946 cases treated by injection, and of this number 3,542, or 71.6 per cent. suffered from one or more complications, while the balance, 1404, escaped.

The complications noted are : Rash, joint pains, pyrexia, with or without rash or joint pains, abscess at the seat of injection and, more rarely, albuminuria, rigors, vomiting and coma.

Dr. Michael's, in his tabulated statement of these complications, show that a considerable decrease is observed in 1896 as compared with 1895, and accounts for this by the difference in the bulk of the serum : its antitoxic effects being the same each year, the complications, therefore, are ascribed not to the antitoxin itself, nor to any substance concerned in its elaboration, but to the vehicle in which it is administered—viz., horse serum. He illustrates the statement by cases.

Under the rarer complications Dr. Michael's remarks upon albumuria, that it appears to be indisputably connected with the use of antitoxin. Coma was observed in but one instance, lasting for forty-eight hours, and was completely recovered from.

It will be seen from these cases that complications directly referable to the use of antitoxin are both transient and insignificant.

W. F. Hamilton.

The Treatment of Diphtheria.

H. Kossel. "Zur Diphtheriestatisk."—*Deutsch. Med. Woch.*, April 14, 1898.

Kossel, assistant in the institute for infectious diseases in Berlin gives the result of the treatment of diphtheria in that institution for the past few years.

The results of the antoxine treatment have been so universally favourable in the practice of those who have had an extensive experience with it that it would appear almost unnecessary to further add testimony to its usefulness, were it not that now and then one sees contributions from the pens of medical men with the object of endeavouring to lessen the confidence of the profession in its efficacy. We are not aware of any physician who has had much practical experience with the serum treatment of diphtheria, writing in any other strain but a favourable. Its opponents appear to be solely those who write without experience.

The following table shows the number of children with diphtheria admitted into the Charité Hospital of Berlin, from the 1st of April, 1878, to the 31st March, 1898, together with the number of deaths in each year :

Year.	No. Admitted.	No. of Fatal Cases.
From April 1st, 1888, to 31st March, 1889.....	163	92
1889-1890.....	167	87
1890-1891.....	140	83
1891-1892.....	104	65
1892-1893.....	152	83
1893-1894.....	168	77
1894-1895.....	306	41
1895-1896.....	265	39
1896-1897.....	115	20
1897-1898.....	156	34

The serum treatment covers the period, 1894-98, and it will be noticed that the number of deaths is less than one-half of that of a similar period previous to the introduction of this treatment.

The following interesting table shows a still more favourable result. It is a list of the number of deaths in German cities of 15,000 inhabitants and upwards :

Year.	No. of Deaths from Diphtheria.	No. in every 100,000 inhabitants who died from diphtheria	
1886.....	12,211	124	
1887.....	10,970	107	
1888	10,142	96	
1889.....	11,919	108	
1890.....	11,915	105	average 106
1891.....	10,484	84	
1892.....	12,365	97	
1893.....	16,557	130	
1984.....	13,790	101	
1895.....	7,611	53	
1896.....	6,262	43	average 44
1897.....	5,208	35	

The following table shows a similar falling off in the number of deaths from diphtheria.

Deaths from diphtheria in Paris during the last twelve years :

Year.	No. of Deaths from Diphtheria.	Year.	No. of Deaths from Diphtheria.
1886	1,524	1892	1,338
1887	1,565	1893	1,262
1888	1,718	1894	993
1889	1,706	1895	411
1890	1,639	1896	445
1891	1,363	1897	274

The above figures are surely sufficient proof, as Kossel says, of the marked beneficial effect of the new therapeutic agent, and that there is no ground whatever for the statement that the lessened death rate is an accidental circumstance.

James Stewart.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Lung Surgery.

DOYEN. "Chirurgie du Poumon."—*Revue de Thérapeutique Medico-Chirurgicale*, 15 Janvier, 1898.

The surgery of the lungs is no longer a novelty, although in the Montreal General Hospital but few cases are sent to the surgeons.

Dr. Doyen speaks particularly of the diagnosis and operative treatment of hydatid cysts of the lung, and cavities.

In regard to diagnosis, while undoubtedly a great advance has been made in the diagnosis of pulmonary lesions by the use of the X rays, yet it is interesting, especially to those who have not ready access to an X ray machine, to know that Dr. Doyen has found it of meagre and almost inappreciable service in diagnosis. He has always by percussion and auscultation been able to locate with precision the exact point at which to operate. He has located tuberculous cavities, a purulent pneumonic area between the two lower lobes of the right lung, and a whole series of cases of sacciform bronchial dilatation, accurately.

He has also diagnosed a hydatid cyst and definitely located it in the neighbourhood of the diaphragm. Such good work shows what can be done by one who will sufficiently perfect himself in the familiar methods of physical examination of the chest.

Operations about the chest are particularly dangerous when the lesion lessens considerably the space usually occupied by the lungs. Respiration and the aëration of the blood are interfered with, and anæsthesia and the turning of the patient on to the side, often embarrasses the breathing to a dangerous degree. The danger is greater in children than in adults.

The condition renders it necessary to proceed with the different stages of the operation with great rapidity. Dr. Doyen allows one minute for each rib resected. If the intercostal arteries give trouble, he clamps them. If the pleural surfaces are found adherent as the result of a previous adhesive inflammation well and good. Otherwise the pleural cavity above and below must be packed with dry sterilized

pads, the same as in operations in the peritoneal cavity. The compresses used must be dry, because the entrance of the smallest quantity of any irritating liquid into any branches of the bronchial tree provokes instantly a violent cough, and may determine a secondary broncho-pneumonia. A pulmonary abscess should be opened, provided there are no complications and the opposing pleural surfaces are adherent, in about six or eight minutes. As a rule there is very little hæmorrhage from the wound in the lung. If the bleeding is considerable, the opening must be tamponed with dry pads, or if the bleeding persists, surrounded by a ligature carried by a strong curved needle. In this way necrotic areas may be removed and abscess cavities drained.

If, notwithstanding the greatest care and despatch, respiration ceases, resort may be had to : I. Tubage of the larynx. II. Insufflation of the bronchial tree. III. Aspiration of the air in the pleural cavity after closure of the wound, and IV. Artificial respiration.

It has sometimes been found that with a large external opening communicating with a large bronchus, the air during respiratory effort whistles right through without ærating the blood. Under such circumstances tight closure of the external wound by tampons has the desired effect, the air being forced into the air cells and the cyanosis passing off. Undoubtedly much remains to be learned concerning lung surgery, but that good work may be done has already been proved.

Miniature Hammers and the Suture of the Bile Ducts.

HALSTED. Bulletin of the Johns Hopkins Hospital, April, 1898.

A very catching title. One wonders how hammers can be used in the application of sutures. The title ensures the reading of the article if only out of curiosity. The surgeons of the Johns Hopkins Hospital can teach more than surgery and teach it well. Professor Halsted inserts an aluminum tool into the common bile duct to facilitate the closure of an incision. To this aluminum rod he attaches a slender handle, the whole bearing some resemblance to a hammer. It will be interesting now to note the number of operators who have devised similar contrivances with which to attain the same object.

Prof. Halsted described in the *Philadelphia Medical Journal*, for January 8th, 1898, *an inflated rubber cylinder for circular suture of the intestines*. Since then four others have claimed the same invention. In the *Philadelphia Medical Journal*, March 5th, 1898, Dr. U. C. Lynde, of Buffalo, N.Y., claims that he had sent to him by

his directions, from the Davol Rubber Co., of Providence, R.I., a similar rubber bag on February 11th, 1897. It is now in order for a Spaniard to prove that he made and learned how to use an aluminum hammer years ago.

Drainage through Fourth Ventricle.

BRUCE AND STILES. "Drainage through the fourth ventricle in a case of acquired hydrocephalus due to chronic non-tubercular basal meningitis."—*The Scottish Medical and Surgical Journal*, March, 1898.

A horse-shoe shaped incision was made, extending from a little behind the apex of the mastoid process on one side to a corresponding point on the opposite side. The integument and muscles being turned down, a $\frac{3}{4}$ inch trephine was applied to the occipital bone in the mesial line, a little above the foramen magnum. After the trephine opening had been enlarged by gouge forceps, a curved needle, threaded with silk, was passed through the dura at the upper and lower extremities of the wound, so as to enclose and ligature the small sinus in the falx cerebelli. The dura was incised transversely between the ligatures and additional vertical incisions being made, the dural flaps were turned back so as to expose the arachnoid covering the posterior extremities of the cerebellar tonsils and its reflection from them downwards over the lower part of the medulla. The arachnoid was slightly thickened and more opaque than normal. The opposed surfaces of the tonsils were found bound together by adhesions. Immediately they were separated several ounces of the cerebro-spinal fluid spurted out, and continued to well up copiously whenever the child retched or strained in any way. After the fluid had escaped, the posterior medullary velum, the choroid plexuses, the foramen of Magendie, and the lower part of the medulla could all be distinctly seen.

The operation in this case was undertaken to relieve symptoms which had become critical, in a case of syphilitic basal meningitis, with secondary hydrocephalus. In this way the surgeon can relieve the tension of the accumulated fluid in the ventricles. The most frequent causes of the obstruction, as shown by *post-mortem* examination, are :

1. Simple fibrous closure of the foramen of Magendie.
2. The adhesion of the surfaces of the tonsils of the cerebellum to each other and to the margins of the fourth ventricle.
3. Cysts formed by adhesions between the arachnoid and the pia

at the posterior inferior aspect of the cerebellum, in which case the foramen of Magendie may be open.

Drainage of the fourth ventricle is probably a much more efficient and scientific operation for relieving intracranial tension than lumbar puncture of the cord.

It has been employed in cases diagnosed as tubercular meningitis with apparent success. Why should it not prove as successful as opening and drainage of the peritoneal cavity in tubercular peritonitis? Certainly the subject is worthy of most careful study and investigation.

George E. Armstrong.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

The Canada Lancet.

March, 1898.

1. A Fatal Pneumonia Without Elevation of Temperature or Pulse. GEO. S. RENNIE.
2. Erosion and Split of the Virgin Cervix. J. L. DAVISON.

April, 1898.

3. The Present Status of the Radical Cure of Hernia. GEO. A. BINGHAM.
4. A Case of Malignant Endocarditis due to Pneumococcus Infection through the Appendix Vermiformis, with Remarks on Infections by this Organism. H. B. ANDERSON.

1. The patient, a hardy man of 72, was brought to the Hamilton City Hospital suffering from strangulated hernia of six days duration. Immediate operation was performed, giving relief, but the man died suddenly three days later. The temperature had never been above normal from the commencement of his illness, until a few hours before he died, when it reached 99½°. The pulse never reached 100 until the morning of his death. There had been no cough, expectoration or pain, and only a slight rise in respiration. The autopsy showed the cause of death to be a double pneumonia, which must have been present for some days before his admission, as it was in the stage of grey hepatization.

2. DAVISON states that in a recent trial several physicians swore that a laceration of the cervix was undoubtedly caused by child-birth, and with which opinion he was quite ready to agree. Recently, however, an article by Dr. Penrose, of Philadelphia, had naturally changed his views regarding laceration and erosion of the cervix. There were quoted two cases, with every probability of virginity, where well marked erosions and splits were found. The work of Dr. Fischel in 1880, on the morphology of the cervix, is referred to, where that author sums up that in thirty-six per cent. of new born infants, the vaginal surface of the cervix, from the external os towards the vaginal

fornices is covered more or less extensively with a mucous membrane, which from the form of its epithelium, from its papillary character and from its possession of mucous glands and crypts, must be regarded as a direct continuation of the cervical mucous membrane. This aberrant mucous membrane is due to a faulty development, and it is owing to its presence that we have erosions which are thus readily and naturally accounted for in the new-born child. The importance of recognising this condition is of the greatest importance from a jurist's point of view.

4. ANDERSON reports the case of a man who died with symptoms of septic infection. Recent vegetations were found upon the aortic valves, from which were cultivated the micrococcus lanceolatus, but cultures from the blood were negative. The vermiform appendix showed marked injection of the vessels in its peritoneal covering, but no lymph deposits or adhesions, a necrotic patch was present about its middle, and on cutting through it muco-purulent matter escaped. This was undoubtedly the point of entry of the organism into the system. No pneumonia or other local lesions were present. Hereditary weakness of the heart and an antecedent syphilis, no doubt determined the localization of the infection to that organ.

The Canadian Journal of Medicine and Surgery.

February, 1898.

1. Recurrent Fugitive Swellings of the Eyelids. JAMES M. MACCALLUM.
2. A Clinical Case of Interest. R. T. MATTHEWS.

March, 1898.

3. Some Cases of Colored Vision. JAMES M. MACCALLUM.
4. The Systematic and Continuous Use of Art in all Cases and Stages of Labor. JOHN HUNTER.
5. Conservatism in the Treatment of Tumours. THOS. H. MANLEY.

April, 1898.

6. Perversion. EZRA HURLBURT STAFFORD.
7. A Machine for Manufacturing Plaster-of-Paris Bandages. H. P. H. GALLOWAY.

1. Five cases of recurrent swelling of the eyelids are related, the clinical pictures being swelling without any pitting, not sharply circumscribed but gradually fading away into the surrounding skin, without change in colour, unless the vasomotor disturbance had been unusually great. That this condition was not due to inflammation in the structures in the lid, conjunctiva, eyeball, or orbit, was at once muni-

fest upon examination. In two of the cases there were marked disturbances of the nervous system, an association which, if looked for, will be frequently observed. Recurrent œdemas due to nervous influences are well known in connection with tabes, hysteria, neuralgia and migrain. It is quite possible that these attacks may occur in patients with some errors of refraction, but that error must not be regarded as a causal factor, for its correction by proper glasses has no influence in preventing the recurrence of the œdema. These swellings have been described under the name of angio-neurotic œdema, but the term has generally been applied only to the more marked conditions, where the swellings have involved many and other parts of the body, and have been accompanied by severe gastro-intestinal symptoms. The minor attacks occurring only about the eyes are really of the same nature, and may or may not be associated with gastric or intestinal symptoms.

2. A puff for a much advertised propriety medicine.

3. Xanthopsia, or yellow vision, is usually toxic, but red vision is of much graver import, as it may be due to hæmorrhage into the vitreous. A case of this condition is cited. The red vision may change into green as the extravasated blood undergoes its usual colour changes. In the production of coloured vision a dilated pupil is an important factor, as it permits an unusual amount of light to reach the retina. If to this is added nerve fatigue, be it peripheral or central, coloured vision might be produced at will. In all such cases one may discover the three factors, a dilated pupil, a dazzling by strong light, fatigue or hyperæsthesia of the retina or fatigue of the central nervous system.

4. After advising physicians, especially the youngest ones, to acquire by wide reading and close observation, a full knowledge of the resources of the obstetric art, and to obtain the fullest possible control over their mental faculties, HUNTER draws the startling conclusion that a case should never be left to nature, but that the physician should always be ready to aid merely physical forces with anæsthestics and forceps and so secure for every patient as painless and as prompt delivery, as is consistent with the greatest possible safety to both mother and child.

6. Perversion is the term set aside by writers on mental diseases to signify an apparent distortion of the sexual instincts. STAFFORD discusses how far these changes or perversions are really the result of disease, and how far they may be explained by evolution, to what extent they are purely morbid, and to what extent not.

7. GALLOWAY'S device for manufacturing plaster-of-Paris bandages

consists of a piece of board, nine inches wide by two feet in length, with two sides made of aluminum attached to it. Riveted to each of these metal sides are two cleats, inclined at an angle of 75°, in which a metal scraper can slide. At each side of the board are placed a couple of screws upon which the scraper rests and thus a very small space is left between the scraper and the board. The end of the bandage material is placed underneath the scraper, a heap of plaster is then deposited upon it and both hands are left free to roll up the bandage which is automatically filled with just a sufficient amount of plaster. The best materials for making bandages are dental plaster and book-muslin which is not very closely woven and will tear without leaving ragged edges.

The Canadian Medical Review.

February, 1898.

1. Traumatic Neurasthenia. Wm. Britton.

2. Two Cases of Tuberculosis of Peritoneum Mistaken for Appendicitis. Robert Hall.

March, 1898.

3. Cardiac Weakness in Elderly People. J. E. Graham.

April, 1898.

4. A Case of Suprapubic Lithotomy. W. J. Gibson.

5. A Case of Graves' Disease, Chorea, Confinement and Heart Failure. F. H. Kalbfleisch.

1. Britton says that the term neurasthenia had fallen into desuetude for a time, but has recently been re-introduced to fill the place of such terms as nervous debility and nervous prostration. He defines it as a loss of power of the nerve centres, together with abnormal excitability—an unusual susceptibility to be influenced by outside impressions and defective volition. Not much has as yet been found out about the pathology for the disease rarely, if ever, proves fatal. The consideration of symptoms is most important on account of its medico-legal bearing. No individual line of therapeutic measures could be considered suitable in all cases. Tonics and diversion of the mind were indicated. Enforced rest is frequently depressing.

2. Hall reports the cases of two girls, 17 and 21 respectively. For some days there had been abdominal pain, localized tenderness and elevation of temperature. The diagnosis of acute appendicitis was made, but on opening the abdomen, the peritoneum was found to be thickened and studded with tuberculous nodules. In one case the

appendix was compressed by fibrous bands, but the circulation was not impeded, in the other it was contracted to a fibrous band. Both cases made good recoveries, and were in excellent health nine months later.

3. In the course of a short paper, GRAHAM points out the many circumstances in life which, acting upon the heart, produce greater or less dilatation. Among the most frequent are depressing mental emotions, which may produce their effects gradually or suddenly. The habits of a patient in the latter half of life are also a frequent cause Over-eating and over-drinking, by distending the blood vessels give the heart an extra amount of work which may lead to dilatation and hypertrophy. Over-indulgence in alcoholic beverages, by producing arterial disease, and thus obstructing the circulation, tend to changes in the myocardium. The effect of tobacco is also marked. He is of the opinion that very few who have used tobacco freely can continue the habit with impunity long after the age of fifty. It is also probable that individuals who, in early life, have indulged in violent athletic exercises to such an extent as to cause hypertrophy will, in their later years, have dilatation from the fatty degeneration which so often follows such hypertrophied conditions. There are many diseases which assist in producing dilation, Bright's, arterio-sclerosis, infectious diseases, typhoid and la grippe. The latter of late years has been the primary cause of a large number of cases. The treatment should consist in carefully regulated diet and regime, and suitable remedies, the most valuable being iodide of potash, strychnine, digitalis, strophanthus and nitro-glycerine.

4. GIBSON gives the history of a man, aged 70, from whose bladder he removed by the suprapubic method a phosphatic stone, weighing seven hundred grains. Its largest circumference was five and a half inches, and its greatest diameter two and a quarter inches. The recovery was uninterrupted, but the man has been unable to empty the bladder without the use of a catheter.

5. KALBFLEISCH confined a woman, aged 27, who had been suffering from exophthalmic gôitre for about three years. She had formerly had several attacks of chorea during pregnancy, but which disappeared after the child was born. She was found in labour and a diagnosis of a breach-presentation was made. As her pulse was very feeble, and she was in a critical condition, the membranes were ruptured and she was rapidly delivered. Stimulants were freely given, but she died a few hours later from heart failure.

The Maritime Medical News.

February 1898.

1. Migrain, with Special Reference to the Gastric Contents. ANDREW HALLIDAY.
2. Shock. J. H. SCAMMELL.

March, 1898.

3. Acute Intestinal Strangulation, with Report of Two Cases. N. E. MACKAY.
4. Malpractice. A. J. MURRAY.

1. HALLIDAY having been a sufferer from migrain for years has made an interesting series of investigations upon his own gastric contents and is of the opinion that the disease is due either to weakened nervous impulses causing a diminished secretion of gastric juice, particularly hydrochloric acid, or to the ingestion of such food in quantity or quality that the ordinary amount of gastric secretion cannot completely digest. This is the primary condition. The secondary is auto-intoxication from fermentation as the common result of either of these failures to maintain the physiological balance. With the idea that migrain is a nerve storm analogous to epilepsy he has no sympathy. Consequently the treatment is to supply the difficiency of acid, and he believes that he has averted several attacks by the administration of hydrochloric acid in ♏x doses, repeated one or two hours after meals, and that the systematic use of the acid has been of great benefit A proper dietary should be observed, never allowing more food to be taken than can be properly digested and reducing the amount still more when subjective feelings that indicate the vicious cycle is about to be established. For the immediate relief of the headache, phenacetin and its congeners may be given, while for the subsequent toxæmia, purgatives, cholagogues, and possibly diuretics, are indicated to eliminate the poison.

2. SCAMMELL discusses shock from several standpoints, but especially that form which is the result of an accident and when the question of operation arises. It is unphilosophical and fatal to operate in cases of primary shock before reaction has come on. Anæsthesia does not diminish existing shock, but prevents the pain of the operation from increasing the shock already present but it adds to the secondary shock if the anæsthesia is prolonged. The plan to follow is to await the reaction, give stimulants, make anæsthesia as short as possible, and avoid all chilling of the patient, afterwards apply dry heat, administer liquid nourishment and stimulants, and obtain quiet and sleep.

3. MacKay reports two cases of acute intestinal strangulation. The one a young man with volvulus, upon whom he operated on the ninth day after the onset of the symptoms. The loop was easily found but was gangrenous, the section was removed and the ends brought together with Murphy's button, and a layer of Lembert's sutures. The other was one of obstruction caused by Meckel's diverticulum. Both died shortly after the operation.

4. Murray in the course of an address on "Malpractice" says that the grounds of an action for malpractice is unskillful work on the part of the physician, whereby the health or general comfort of the patient has sustained injury. It matters not whether the tort is due to *wilfulness*, to *carelessness*, or to *ignorance*. The physician, in holding himself out to the world as such, gives expression to the general inference that he possesses ordinary skill in the practice of his profession. "It is his duty, therefore, to exercise all reasonable care in the manner and performance of treatment, for he contracts to use his best judgment and also promises ordinary skill and diligence. In fulfillment of these he discharges his legal duty" (Cooley on Torts). The matter of compensation is not material. Gratuitous service does not render the physician free from liability.

Kenneth Cameron.

Reviews and Notices of Books.

The Surgical Complications and Sequels of Typhoid Fever.

By William W. Keen, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; Vice-President of the College of Physicians of Philadelphia; Membre Correspondant Étranger De La Société De Chirurgie De Paris; Membre Honoraire De La Société Belge De Chirurgie. Based upon tables of 1700 cases compiled by the author and by Thompson S. Westcott, M.D., Instructor in Diseases of Children, University of Pennsylvania; Visiting Physician to the Methodist Episcopal Hospital, Philadelphia. With a chapter on the Ocular Complications of Typhoid Fever. By George E. de Schweinitz, A.M., M.D., and as an appendix the Toner Lectures, No. V. Philadelphia: W. B. Saunders, 925 Walnut St., 1898. Canadian Agents: J. A. Carveth & Co., Toronto.

Seldom is a book of such great interest published. The authors have gathered together in this volume an immense amount of most useful information and presented it in a style at once interesting and instructive.

The title may be a little misleading in that it is called, rightly, Surgical Complications and Sequels, but the matter is even more important to the physician than to the surgeon, because typhoid and the complications and sequels occur under his care, and on his watchfulness and alertness in recognizing these unusual conditions, the patient is dependent as well as the surgeon.

In the first chapter an interesting *resumé* is given of our knowledge of the typhoid bacillus alone and mixed with other pathogenic organisms. In subsequent chapters, typhoid gangrene, affections of joints and bones, typhoid abscesses and hæmatomata, cerebral complications of typhoid, affections of the ear, parotid, thyroid gland, larynx, pleura, lungs and heart are fully described, and the diagnostic signs and appropriate treatment given in detail.

The chapters on stricture of the œsophagus, cholecystitis and perforation of the gall-bladder and intestine discuss these conditions fully, taking up the question, always a most important one, of diagnosis, and lastly their treatment.

Of the treatment of perforations of the gall bladder and intestine, Dr. Keen speaks in a hopeful tone. Of four cases of gall-bladder perforation operated upon, three recovered. Dr. Westcott has collected 83 well-authenticated cases of typhoid perforation of the intestine operated upon,

with 16 recoveries, or 19·36 per cent. of cases and 80·64 per cent. of deaths. When this is contrasted with Murchison's unchallenged figures of 90 to 95 per cent. of deaths after perforation without operation, we may well take courage for the future.

Then follow chapters on the affections of the spleen, and sexual organs, and lastly the very able treatment of the subject of ocular complications of typhoid by de Schweinitz.

By permission of the Smithsonian Institution, Dr. Keen has added as an appendix the fifth Toner lecture delivered by him in 1876.

The book is of very great interest, dealing with an ever present disease, and should be read by all physicians as well as surgeons. G. E. A.

A Manual of Legal Medicine. By Justin Herold, M.D. J. B. Lippincott, Philadelphia. 1898, pp. 678. Canadian Agent, Charles Roberts, 593A Cadieux Street, Montreal.

The author has given us a well arranged and readable book, which, without being lengthy contains a vast deal of information hitherto only accessible in larger medico-legal works. This result has been largely obtained by abstracting and condensing the valuable material which has appeared of recent years in the various systems by American writers, it being stated in the preface that "no pretensions are made to originality." The sources of information are throughout acknowledged with a scrupulous care that leans in the direction of crediting living authors for matters, which have long formed medico-legal aphorisms. Recent views which have not yet found their way into the standard text-books are in most cases ignored. This lessens the value of the book to those engaged in active medico-legal work, and we do not agree with the author that questions still *sub judice* are consequently "idle and superfluous."

One of the many good points of the book is that quotations from authorities are given fully on the more important subjects, condensation being skilfully effected at the expense of those of minor importance. The chief criticism we have to make is that the work follows rather than guides current medico-legal opinion throughout. W. J.

The Elements of Clinical Diagnosis. By Prof. Dr. G. Klemperer. Professor of Medicine at the University of Berlin. First American edition. Translated from the seventh and last German edition by Nathan E. Brill, A.M., M.D., Adjunct Attending Physician, Mount Sinai Hospital, New York, and Samuel M. Brickner, A.M., M.D., Assistant Gynæcologist, Mount Sinai Hospital, Out-Patient Department. New York: The MacMillan Co.

Several books of this class have recently appeared either in their first edition or in revision,—Vierordt, Von Jaksch, Simon, Bury and others

That now under review appears for the first time in translation, and to Doctors Brill and Brickner the medical profession owes much for placing so excellent a translation before its members.

As the title implies, this book embraces the elements of clinical diagnosis and these are presented in a manner so direct that the work is pre-eminently adapted to the use of students and general practitioners. Including the index, there are less than three hundred 8vo pages.

The work is divided into twelve chapters, under eight of which special systems are examined while the remaining four chapters are devoted to: 1. Anamnesis and General Conditions. 2. Special Symptomatology of the Acute Febrile and Acute Infectious Diseases. 3. Animal and Vegetable Parasites. 4. The Röentgen Rays as Diagnostic Aids.

This last chapter is new.

Sixty-one illustrations are found throughout this little book, some thirteen of which represent the various fever curves. Those devoted to the section on bacteria are rather imperfect, affording mere suggestions of morphology.

This work is valuable for its systematic arrangement of matter, and its directness of style, by means of which, in consideration of the size of the book, the author secures to his work a surprising degree of comprehensiveness. W. F. H.

Saunders Medical Hand-Atlases, Internal Medicine and Diagnosis. Atlas of Methods of Clinical Investigation, with an Epitome of Clinical Diagnosis and the Special Pathology and Treatment of Internal Diseases. By Dr. Christfried Jacob, Formerly First Assistant in the Medical Clinic at Erlangen. Authorized translation from the German. Edited by Augustus A. Eshner, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic; Physician to the Philadelphia Hospital. With 182 coloured illustrations in 68 plates and 64 illustrations in the text. Philadelphia: W. B. Saunders, 1898. Canadian Agents, J. A. Carveth & Co. Price $3.50.

The idea of translating into English the "Lehman medicinische Handatlanten" was an extremely good one, and this the first volume of the series to appear, shows that the promises made by the publishers have been faithfully carried out and the work has lost nothing in value. The first six plates contain thirty figures of cover-glass preparations of the blood from various diseases, both freshly drawn and stained by different media; and plate vii. shows the various alterations in blood spectra and the crystals of hematoidin and hemin. Of this series too much cannot be said in praise. The colouring is excellent, and, with the single exception of malaria, the appearances are strikingly like those actually observed under the microscope. There is one plate of the microscopy of the mouth and nasal passages and three of the sputum. Besides the microscopical appearances of the stomach and intestinal contents, the most important

colour reactions are shown and the same plan is carried out in regard to the urine. Though undoubtedly of aid to the student these are not as well depicted as are the microscopical appearances.

The urinary sediments are given in six plates containing forty-one separate fields and are quite in keeping with the rest of the book in regard to accuracy. One plate is devoted to the pyogenic micro-organisms.

The remainder of this portion of the book shows the normal projection of the viscera and a diagrammatic representation of the diseases of the lungs, heart and abdominal organs. The plates are well executed and in this as in the part already described the value of the drawings is greatly increased by having a short account of the case from which the diagram was made, together with the physical examination and further history, on the opposite page.

The second part of the book treats of the examination of the patient and methods of investigations together with the special diagnosis of diseases of the internal organs and is intended to supplement the plates. It is necessarily very much condensed and is not expected to take the place of the larger works on the subject but is a concisely arranged compendium as explained in the preface.

That in books of this class, good illustrations convey far more information than the most elaborate descriptions is admitted by every one and we have much pleasure in recommending it to our readers as first class in this particular. G. G. C.

Annual and Analytical Cyclopædia of Practical Medicine. By Charles E. deM. Sajous, M.D., and One Hundred Associate Editors, assisted by Corresponding Editors, Collaborators and Correspondents. Illustrated with chromo-lithographs, engravings and maps. Volume 1. Philadelphia, New York, Chicago: The F. A. Davis Company, Publishers. 1898.

The present is quite different from the former Sajous' Annual. The Annual in its old form was found to be expensive and in other ways unsatisfactory. For example, a disease might be found omitted altogether; the reason being that nothing new had appeared during the year. Nevertheless, its absence was at the time a source of annoyance. In the present scheme all diseases will receive attention. Their "Etiology," "Pathology," "Treatment," etc., will be given, in all cases to be followed by excerpts, indicating recent progress. These excerpts will be made to cover the advance made during the last ten years. If nothing new has been done, then the disease will be described as understood, fifteen or twenty years ago. Thus it will be seen, the present scheme is to publish an annual plus an encyclopedic history of each and every disease. The diseases will be taken up in alphabetical order. The whole to be published in six volumes. Volume 1 contains one sixth of the whole.

Very great facility of reference is obtained by publishing the main

body of an article in large type and the excerpt in small type. The article on "Abdominal Injuries," for instance, contains one hundred and sixty article excerpts besides the general text; that on "Appendicitis," a still larger number.

The articles in the present volume on Anæmia, Albuminuria and Alcoholism, are of great interest.

Therapeutic agents also receive full attention. The old obsolete drugs are omitted, and the newer remedies treated of very fully. For instance, there is a very full article on that interesting group of "Animal Extracts."

The book is well illustrated. The Publishers as well as the Authors are certainly to be congratulated on the handsome appearance of the the first volume. G. E. A.

Society Proceedings.

Stated Meeting, March 18th, 1898.

ROBERT CRAIK, M.D., PRESIDENT, IN THE CHAIR,

Excision of the Tongue.

Dr. G. E. ARMSTRONG exhibited two patients from whom he had excised the tongue, and reported the results of five cases on which he had operated during the winter. The reports will be published later.

The Static Machine in X Ray Work.

Dr. ROBERT WILSON showed a small Toepler-Holtz static machine (made by himself), to illustrate the use of the static current to illuminate a medium-sized x-ray tube. The two revolving plates of $\frac{1}{8}$ in. hard rubber, were 18 ins. in diameter, with six German-silver sectors on the front one. The machine was cased in, containing a tray with 2 lbs. calcium chloride, well dried. The necessary speed (500 to 900 revolutions) was easily obtained by a hand-driving gear, or (this being removable) by an electro motor, or small waterwheel. The latter was the method adopted by himself, a speed of 900 revolutions being easily obtained from the office water-tap. The machine was not intended to compete with a large coil, but gave, with an Edison "medium" high vacuum focus tube, perfect definition of the bones of the extremities, up to the shoulder and pelvis. Among the radiographs shown were: Ununited fracture of tibia, with faulty union of fibula; point of a scalpel (1-32 ins.) broken in finger while amputating terminal phalanx, etc., etc.

In reply to questions, Dr. Wilson said the entire outfit had cost him less than $25, including 6 by 8 calcium tungstate fluoroscope (home-made), and one Edison "medium" focus tube. He thought a similar outfit could be placed on the market for $50. He had never had any trouble from dampness; in fact, it had been raining slightly when the machine was brought from his home, still it excited immediately. He did not use Leyden jars and spark-interruptors, although convinced these devices would increase the power of the machine; it worked sufficiently well without them. A machine of this size was absolutely useless for medical diagnostic work, but indispensable to one doing general surgery. One glance at an arm, leg, hand, etc., without disturbing

the clothing, being sufficient to satisfy one as to presence of fractures, dislocations, foreign bodies, etc. He preferred the static current, as being less dangerous, less liable to give way at a critical moment, less trouble, less expensive to operate, less liable to puncture the tube, and of immensely higher voltage than the coil, with the further advantage of being able to use the current therapeutically. In Dr. Monell's office in Brooklyn, he had seen the doctor's heart pulsating perfectly at a distance of seven feet four inches from the tube; the pelvis, shoulder-girdle, etc., perfectly outlined at 4 feet from the tube. Dr. Monell used an 8-plate 30-inch machine, driven by a one-sixth h. p. electro motor at 250 revolutions; such a machine was used for medical purposes as well as X ray work. The results obtained far excelled anything done by coils. The advantage of getting a distance away from the tube was the elimination of error due to enlargement of the shadows when too close. The speaker had ordered, and expected delivered by the middle of May, an identical machine. The barium-platino cyanide screens, on stretched vellum, were preferable where one wished to *see* the shadows; the calcium tungstate screens were the best for skiagraphic work. As to focussing the rays outside the tube, a question of vital interest to scientists, and on which he had, in a small way, been experimenting, he said he thought it would be premature to make any definite statement, but thought he was justified in saying that we were within measureable distance of its achievement, and hoped at some future time to lay the results of his work before them

The Neuron and the Chrome Silver Method.

Dr. N. D. Gunn showed several photographs of ganglion and neuroglia cells, stained according to the Andriezen method.

The general conformation of the cells was then taken up, and the protoplasmic and axis-cylinder processes described, according to latest researches by Cajal, Forel and others. The independence of each cell was then dwelt upon, showing that there was no anastomosis between the various cells, as was taught by Gerlach. He claims that protoplasmic processes or dendrites possess a well marked nervous function and are not merely aids to cell-metabolism, as seemed proven by the experiments of certain French authorities; for there are nerve cells which are adendritic and others whose axis-cylinders have not yet been demonstrated. The collateral fibrils of axon were then shown to possess great anatomical interest as being concerned in the grouping of cells into centres and areas. Hill's work upon the chrome silver method was referred to, and many of the theories held as regards the method were shown to be either erroneous or not proven.

The beautiful pictures produced by this stain have not yet clearly established the anatomical basis as a true index to the physiological significance of the parts of the neuron. However, there can be no doubt that this method has established many facts, not the least being that contact and not continuity is the controlling idea of the cell structure of the brain and cord.

Stated Meeting, April 1st, 1898.

ROBERT CRAIK, M.D., PRESIDENT, IN THE CHAIR.

Drs. A. D. Aubry, E. R. Brown, and Gustave Lewis, of Montreal were elected ordinary members.

Cardiac Embolism.

Dr. WYATT JOHNSTON showed a specimen where degeneration of the heart muscle involving the half wall of the left ventricle due to embolism of the coronary artery was the cause of sudden death. The affected area of the myocardium showed subendocardial ecchymosis and was of a greyish, yellow colour. Microscopically, fibres showed granular and fatty degeneration, and the nuclei did not stain well. The source of the embolus proved to be a small thrombosis in the left auriclar appendix from which a portion had become detached and lodged in the left coronary artery bifurcation. Suspicions of poisoning had arisen in this case owing to the patient having suffered from vomiting, diarrhœa and weakness for several days before death. The presence of tænia in the ileum was perhaps the explanation of the gastro intestinal symptoms and the congestion and catarrh of the stomach and intestines which was found post-mortem. No analysis was ordered by the jury, as the actual cause of death could not have originated through poisoning.

A Case of Laryngectomy.

Dr. JAMES BELL presented a patient from whom he had removed the larynx for epithelioma, and gave the following history: G. P., æt. 65, was quite well until September, 1897, when he contracted a "cold," from which he soon recovered, but some soreness of the throat persisted in spite of sprays and other local treatment. In November his voice first became distinctly husky. In January his throat was examined, and a small warty projection removed and examined, and found to be epithelioma. A preliminary low tracheotomy was done on the 7th of February, and on the 16th of February the whole larynx, including the epiglottis and the cricoid cartilage, was removed. A Hahn's tampon canula was employed during the operation, and

replaced next day by an ordinary silver tracheotomy tube. The stump of the trachea was drawn well forward and attached to the skin all around and packed with iodoform gauze to protect the air passages from wound and pharyngeal secretions. The transverse incision was sutured, with the exception of an opening at either end, through which the phrayngeal portion of the wound was packed with iodoform gauze, as was also the vertical wound, which was left unsutured. A large, soft rubber catheter was fixed into the œsophagus by suture, and at the end of twenty hours the patient was fed through this tube for the first time. He was fed regularly through this tube for 48 hours, when it was removed, and from that time he was fed regularly and without difficulty by introducing a stomach tube into the œsophagus through the mouth. There was no vomiting, and he always enjoyed his food. The wound packing was changed daily and no secretion ever entered the trachea. On the 21st, five days after operation, a mild delirium of a jocular character developed and increased, with considerable restlessness at night, until, on the 23rd, iodoform was completely abandoned and chinosol gauze used in its stead. The delirium immediately began to grow less, and in three days, February 26th, he was quite rational again. In the meantime all the skin union had given way and the flaps were held only by the sutures.

On the 27th he had a very restless night. Complained of itching over the body and arms, and the pulse and temperature, which had throughout been practically normal, rose a little.

On the 2nd of March he began, in the very early morning, to perspire freely and to complain of weakness. The pulse was rapid, 120 and he felt miserable. Nothing could be discovered to account for the change in his condition, and he was given a dose of cascara, followed by an enema, which brought away a dark stool with some black fluid, about midnight. He felt better and slept for five or six hours after this. About noon, on the 3rd of March, he began to complain of some discomfort in the lower part of the abdomen, and his midday meal was omitted. Between 3 and 5 o'clock in the afternoon he had three most alarming syncopal attacks, the cause of which was explained during his third attack by an involuntary evacuation of a very large quantity of dark clotted blood. From this time he began to rally, and he has had no further trouble since. This is undoubtedly the history of iodoform toxication,—at least up to the attack of intestinal hæmorrhage, which I see no other explanation for. I could not, at first, believe that the mere packing of a moderate sized wound for a few days with iodoform gauze could produce this result, but the fact remains that the symptoms promptly subsided when the iodo-

form was abandoned. It must also be borne in mind that probably much of the iodoform was swallowed with the saliva. The subsequent history of the case has been uneventful. On the 19th of March the edges of the skin wound were pared and sutured, and union took place without difficulty. On account of the gaping pharyngeal wound no food was given, except by stomach tube, until the 25th of March, when he took solid food without difficulty, and in a day or two liquids were also swallowed with ease. Before the pharyngeal wound was resutured, the action of the œsophagus in swallowing the saliva could be observed through the wound. He is now practically perfectly well.

The larynx, when removed, was examined by Dr. Bradley, who described it as follows:

The free surface of the epiglottis, near its root, is occupied by a roughened, rather nodular ulcerated surface, with somewhat undermined edges; the extent of the ulceration is 4 cm. in a vertical direction by 3.5 cm. transversely. There is an absence of induration about the periphery of the affected area. Both false vocal cords are involved by lateral extension, the right being completely ulcerated through at about its centre, exposing both ventricle and saccule; the left is not so deeply affected, the epithelium alone being eroded. The left true cord is unaffected; the right shows a loss of epithelium over an extent of 15 mm. transversely by 5 mm. vertically.

The disease had not extended beyond the larynx in any direction, and there was no lymphatic involvement.

Dr. Bell referred briefly to the recent literature of the subject, especially to a paper read by Dr. Graf, of Berlin, before the German Surgical Association in April, 1897. This paper was based upon the experience of Prof. Von Bergmann, of 20 total extirpations and 28 partial resections of the larynx for malignant disease.

Removal of a Fibroid Tumour at the Second Month of Pregnancy.

Dr. Lapthorn Smith reported a case of removal of a fibroid tumour from the pregnant uterus, by myomectomy, without causing a miscarriage. He also showed the tumour, a nodular one, larger than an orange and very dense. The patient was 25 years of age and had been married six months. Three months after marriage she had a miscarriage, but became pregnant again immediately, for she had no flow since the 10th January, when it stopped. About middle of March she began to suffer severe pain in the right side, and she noticed a lump pressing forward the abdominal wall in right lumbar region. When seen by Dr. Lapthorn Smith, in consultation with her

family physician, he found her about 2½ months pregnant, with a nodular subperitoneal fibroid attached to right corner of uterus. As it was growing rapidly and was not only painful, but affecting the *morale* of the patient, he advised early operation, which was performed on the 1st April. The tumour was larger than the pregnant uterus, so that the abdominal incision which permitted the tumour to be extracted, also permitted the uterus to be lifted out, thus enabling him to remove the tumor and to close up the hole in the uterus very deliberately. Clamps were applied gently to the uterine wall, and thus the operation was almost a bloodless one, although the hole, two inches long, had to have two rows of Lembert sutures before the clamps could be taken off, and then a third row had to be applied to completely stop the oozing. She made a splendid recovery, hardly requiring any anodyne, and there has not been the slightest attempt at a miscarriage. As far as he was aware this was the only case of the kind ever reported in Canada.

Malignant Endocarditis.

Dr. H. A. LAFLEUR read the report of this case. (See page 249 of the April number.)

Intestinal Obstruction by Meckel's Diverticulum.

Dr. JAMES BELL read the following report of a case of intestinal obstruction by Meckel's diverticulum, and presented the specimen:

H P., æt. 16, a well-developed and well-nourished girl, was brought to the Royal Victoria Hospital from the country, at 10 o'clock on the evening of Friday, March 18th, with well-marked symptoms of intestinal obstruction, and operated upon two hours later. She had always enjoyed good health, with the exception of occasional attacks of pain in the abdomen and vomiting, sometimes accompanied by headaches These were called bilious attacks, and she had suffered from them "all her life." She had had a long walk on the previous Monday, and was quite well on Tuesday, but began to have general abdominal pain on Tuesday evening, which kept her awake most of the night. She got up on Wednesday morning and vomited, for the first time, immediately after breakfast, about 7 a.m. The vomiting continued from this time till admission, and about 10 a.m., Friday, it was first noticed to be distinctly fæcal. The bowels were moved early on Wednesday morning, but neither flatus nor fæces was passed afterwards. On Thursday afternoon the temperature was 99.2° and on Friday morning 101.3°. On admission it was 102 , and the pulse, 112. Distension was first noticed on Friday morning, and on admission it was quite marked, but limited to the central region of the abdomen. These

facts pointed very clearly to a complete obstruction, low down in the small intestines, probably of a mechanical nature, and, from the history, probably due to some congenital condition, suggesting a Meckel's diverticulum as the cause. On opening the abdomen, in the middle line a cord-like structure was found attached to the right of the umbilicus, which, on being withdrawn, was found to be a Meckel's diverticulum. The cord-like portion was cut off between ligatures and the point of obstruction was found in the ileum, about an inch above the ileo-cæcal valve. There was a deep furrow in the wall of the intestine, where the construction had been applied, which was suggestive of long continued presence. The diverticulum was attached close to the mesenteric border of the small intestine, at least three feet from the ileo-cæcal valve. The exact site was not determined, but at least two feet of the ileum was withdrawn and the attachment was still considerably higher up. It was cut off close to its attachment, where it was about three-quarters of an inch in diameter, sutured and inverted into the lumen of the bowel by Lembert sutures. There was a free evacuation of the bowels a couple of hours after operation, and the patient's progress has been entirely satisfactory.

Meckel's diverticulum is frequently met with and is a very common cause of obstruction, especially in children and young people. In 3,400 post mortem examinations in St. Bartholomew's Hospital it was found 27 times (Sajous). It arises nearly always within two feet of the ileo-cæcal valve and produces obstruction in many different ways, depending upon the point of attachment of its extremity. Its extremity is often free.

Intussusception.

Dr. F. R. England read the report of this case. (See page 347.)

Empyæma of the Maxillary Antrum.

Dr. H. D. Hamilton read a paper on this subject. It will be published later.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXVII. MAY, 1898. No. 5.

REGISTRATION CONSIDERED AS A FINE ART.

To return to the proxy system! It has been usual for the Registrar and others connected with the present government of the College of Physicians and Surgeons of this province to obtain from practitioners, and more especially from the newly licensed practitioner, a proxy, at periods varying from three years to as many months, before the Triennial election. In obtaining these proxies we find they have, in a large number of instances, been gained from those who have not in the least realised the full significance of their act. Immediately after a young practitioner has obtained his license, he has been approached by the Registrar, or some one who has aided him in obtaining his diploma, and in the fulness of the heart he has gladly acceded to the wish expressed, that he should give his proxy to this or that individual. In so doing he has regarded the matter as being purely a personal one, and he has imagined that he has simply been giving a personal vote to the applicant. There has been not the least idea that this proxy could be used, and would be used, to determine the election of the entire Board of Governors—of thirty-two individuals instead of one—and assuredly it has never been imagined by the giver that he was conferring more than a personal favor upon the applicant or debarring himself from voting as he pleased with regard to other members of the Board. Apparently, however, the Registrar is of the opinion, and has laid down the law that a proxy once given covers the election of the whole Board, and, what is more, cannot be annulled save by personal presence at the election.

A proxy is, in its nature, a power of attorney, authorizing one individual to represent another, and to act for him on a given occasion. By these terms, therefore, on a given occasion, the representative can make a very wide use of the power so given to him. He can employ

it not only for his own election, but for the election of others. This much must be admitted by all. But it is always in the power of the individual to revoke such a power of attorney, and to nominate, at a later date, some individual as his representative, thereby annulling his first proxy. Indeed, if any individual is of opinion that the representative whom he has nominated will not properly represent his views, it is not only in his power, but it is his duty, to revoke the proxy, and nothing in law can prevent him so doing.

The Registrar of the College of Physicians and Surgeons of Quebec, however, holds different views, and recently he has officially refused to register the second and modified proxies of more than one practitioner; they have been returned to them rejected.

There is an innocent ignorance of the law in this action of the Registrar which it is painful to contemplate. The first proxies may, it is true, have contained upon them a statement to the effect that they were the only proxies of which the registration was authorised; but such a form of words does not bear, and cannot bear, the construction placed upon it by the Registrar, that no subsequent proxy can be registered by that individual: any more than the bringing forward of a document in which the testator has declared, say in 1883, that "this is my last will and testament," can be brought forward to invalidate a will of the present year in which the same form of words is employed.

The meaning of this move on Dr. Beausoleil's part is obvious; but such action will assuredly not serve his purpose, and already legal proceedings have been taken to enforce him to register all duly signed proxies, annulling those given at an earlier date.

We cannot but thank Dr. Beausoleil for giving us so entertaining a contest. What is to be the next move?

THE PATHOLOGY OF URÆMIC INTOXICATIONS.

We publish *in extenso* in this issue of the JOURNAL the very interesting and suggestive paper with the above title presented by Dr. C. A. Herter, of New York, at a recent meeting of the Montreal Medico-Chirurgical Society. Apart from its intrinsic merit, this communication marks an epoch in the history of the Society. It is the first occasion on which an invitation has been extended to our American *confrères* to participate in the proceedings of the Society, and the thanks of the medical profession of Montreal are due to one of the past presidents of the Society for taking the initiative in this praiseworthy innovation.

That the experiment, if it may be so called, was fully successful, cannot be doubted, judging from the large and appreciative audience that assembled to hear Dr. Herter, and if the ensuing discussion was not a very animated or critical one this must be attributed to the fact that the practitioner of medicine is scarcely qualified to discuss the experimental side of one of the most obscure problems of pathology, however much he may be interested in the clear and lucid exposition of the subject by one who has the right to speak *ex cathedrâ*, as the lecturer in the present instance undoubtedly has. It is to be hoped, and it is almost safe to say, that Dr. Herter's contribution is but the first of a series in which other distinguished members of the medical profession in the United States will be represented, and that by this means we may be brought into intimate connection with the great medical centres of America. We are too provincial, and provincialism in medicine is anything but desirable.

Dr. Herter's paper is a summary of personal observation and experiment, and, though he has made "a study of uræmia that has extended over many years," he shows a reticence and a conservatism in drawing conclusions from his work that offer a striking contrast to much that is published on similar lines of investigation in current medical literature. Although he has purposely refrained from details of technique and extended reference to prior or contemporary labors of others on this subject, one is convinced by reading his paper that his investigations have been based upon a wide knowledge of the literature of uræmia and a proper appreciation of the fallacies of some of the experimental methods hitherto practiced, *e. g.*, that of intravenous infusions of urine in animals, which was the basis of the experiments of Bouchard, Teissier and others. It cannot be doubted that a solution of the problem of uræmia can be obtained only on the lines he has followed, viz., the experimental study of the blood in healthy human beings and in those suffering from uræmia and other allied toxic states, and the comparison of such states with those artificially produced in animals by double nephrectomy or ligation of the ureters. The increased toxicity of uræmic compared with normal blood serum may be accepted as an undoubted fact, but it is as yet uncertain which of the retention products in the blood is to be held responsible for the clinical phenomena of uræmia, or if this condition is due to the collective action of these products. The arguments advanced in favor of any of the individual constituents found in the blood serum (urea, extractives, salts, &c.) being the sole or even the chief cause of uræmia have been shown to be insufficient, though some of these probably produce some of the individual symptoms which we are

accustomed to call uræmic; notably urea, which is certainly very constantly associated with the vomiting and diarrhœa of nephritics.

Dr. Herter gives a very striking comparison between the symptoms of human obstructive uræmia and those of the experimental uræmia in dogs induced by double nephrectomy or ligation of the ureters. The similarity is almost complete, and proves not only that the pathological basis of this form of uræmia is the same in both cases, but also that the condition in the human being may be elucidated by further experiments on animals. In the dyspnœic type of uræmia, associated with cardio-vascular changes, the conditions present offer many more difficulties to the investigator, for in addition to an undoubted toxæmia there are mechanical factors at work, and it is as yet impossible to estimate the part that these different agencies play in the development of the uræmic symptom-complex.

In still other cases infection complicates the question by the introduction of bacterial toxins.

Dr. Herter, moreover, makes a strong plea for the extension of the term uræmia "to every case of renal insufficiency for urea, although well-defined uræmic symptoms be wanting."

Among the points of special interest to practitioners may be mentioned the statement that the customary estimation of the urea of the urine is an unnecessary and useless procedure, the reduction in the total solids being sufficiently indicated by the volume and specific gravity of the urine. The urea estimation of the blood on the other hand affords very important indications of renal competency or incompetency and should be adopted in clinical investigations. For this purpose only a few cubic centimeters of blood are required.

In this connection also may be noted the fact referred to in the paper, that renal insufficiency for urea is a characteristic of fatal pneumonia, a statement fully borne out by the statistics of the post-mortem room.

It is to be regretted that, for fear of wearying his audience, Dr. Herter did not carry out his first intention of including some remarks on the treatment of uræmic states. We feel sure that his hearers would willingly have listened to any corollaries of his very interesting experimental studies, and the hope may be expressed that on some future occasion we may have the pleasure of hearing Dr. Herter's views on this subject.

THE SMOKE NUISANCE.

It is a disgrace to Montreal that the by-laws of the city, with regard to smoke and smoke prevention, remain to all intents and purposes a dead letter. Small offenders, whose kitchen chimneys it may be have

misconducted themselves, are occasionally brought up and fined, but large offenders and the larger industries situated in the manufacturing parts of the city are allowed to pollute the air with impunity. For over now two months one tall chimney in the West End, probably the biggest in the city, has emitted a steady stream of thick black smoke, and apparently no steps have been taken to arrest the scandal, for scandal it is. In the East End there are offenders who, in proportion to the size of their chimneys, are equally culpable, and who are equally indifferent to the comfort and health of their neighbors and to the credit of the city. Those who live in the residential part of the city away from the river, who are the more influential portion of the community, are but rarely troubled by this matter—their sky remains unclouded—and we suppose that as they are not personally affected the nuisance has been allowed to continue.

The prevailing winds blow these clouds of smoke either up the river or down, rarely towards the mountain; one has, however, but to climb the mountain and look across the city to see the extent of the nuisance and realize the discomfort it must bring to our thick working-population. Occasionally, it is true, the smoke does cross the city in this direction. On the 19th ultimo, a dense black cloud of smoke issued from the chief offending chimney, sailed heavily across the city and stretched for at least two miles across Dominion Square, and even over Park Avenue it was still heavy and black.

The first impression of the stranger reaching Montreal by water is that he is coming to a filthy manufacturing centre in which everyone is absolutely callous of appearances. How this affects strangers was impressed upon us frequently last Summer by the remarks of our visitors at the British Medical Association meeting. One whose name and fame are world-wide, and whom we thought we had duly impressed with the position and beauty of the city, could only retort: "Don't talk about your city, its beauty and its progress, when your citizens endure placidly that heavy cloud of smoke; we may be bad in England, but we can show nothing as bad as this in cities which call themselves metropolitan." In England they have some excuse for their smokiness, for they are forced to use soft coal, giving abundance of soot. Here we have no excuse; indeed, what strikes one in looking at the city from above, is the singular freedom from smoke in the upper portions of the city.

Is this condition to continue? Our opinion, as medical men, is that it must come to an end, and that quickly. There is no reason for the smoke save this, that there is initial cost in installing good smoke consumers. It has been abundantly proved that such good smoke con-

sumers are now upon the market, and no one can excuse himself on the plea that these instruments are not sufficiently good and fully developed to be practicable. It is painful to think that the worst offenders are concerns which are making large annual profits, and which can best afford the relatively small expense of putting a stop to the nuisance. Being limited companies they have, it is true, no hearts, but they can be made to see that it is cheaper in the long run to consume their own smoke rather than to waste the substance of their shareholders in fines. It is possible that the mode of treating offenders, as regulated by our by-laws, is cumbrous, and may seem to take on the character of a persecution. On reading those by-laws we do not see that this is the case; nevertheless there are better methods of dealing with the evil.

In certain large German cities they have a method which is very prompt. Here and there throughout the city, in church steeples and other lofty positions, they have members of a corps of watchmen who, during the day, look more especially for evidences of smoking chimneys, and during the night look for outbreaks of fires. In the watch chamber there is a carefully plotted out plan of the city whereby, knowing the direction and the angle of the telescope, they can calculate to within a few yards the exact position of a chimney emitting dense smoke, and their duty is, if the smoke continue for three minutes, to telephone forthwith to the police of the district in which the nuisance occurs, and a policeman is sent round with a paper announcing a fine, that fine to be paid immediately; or, as an alternative, the offender can appear before the magistrate and appeal. If the same nuisance recurs within a week, the fine, on the second action, is raised: and if it continues, if we remember aright, there are by-laws which regulate that more severe proceedings be taken. There is a great deal of convenience in this method; where the chimney smokes by accident, the householder is saved the trouble and the annoyance of appearing at the Police Court, while the inveterate offender finds that the frequent payment of $5 or more for the privilege of allowing his chimney to smoke, becomes too much of a tax, and for his protection and economy finds it politic to stop the nuisance. We would suggest some such course as this to our City Council, for the annoyance has become altogether too extreme to allow it to continue any longer.

"THE METAMORPHOSIS OF AJAX."

We have so far not noticed in these pages the admirable work that has been performed by Mr., now Alderman, Ames in studying the hygienic conditions of the districts of our city most representative in

that it includes areas inhabited by the well-to-do, lower middle class and the artizan population of the city. Such work as Alderman Ames has performed by house to house visitation and intimate study of the conditions of life and health in the various quarters of "the city below the hill," forms truly a basis of civic legislation in all directions. Never before in Montreal has there been made so careful a study of the conditions of life and property. And, more especially, must these observations form a starting point for all of the many needed amendments in the matter of public health.

Already we are glad to see that Alderman Ames is causing his investigations to bear good fruit. They showed beyond doubt that properties upon which privy pits existed had a much higher death rate than those with no privies. His motion now before the City Council to bring about the abolition of privies and cesspools within the city limits, appears to us, as it must appear to everyone interested in the health of the city, to deal with matters of such public importance and to seek to effect a reform that is so imperative that it is unnecessary for us to bring forward any argument in its favour. We can but say that Alderman Ames in inaugurating this civic reform has the support of the whole of the medical profession.

Above all we approve of the practical way in which Alderman Ames has proceeded. Many an enthusiast might have brought forward a motion to uproot the system forthwith, heedless of the pockets of the smaller proprietors, and have failed through overeagerness. Instead of that Alderman Ames proposes that sufficient time be given to gradually effect the change, and introduces a clause permitting aid to such proprietors of small dwellings as are too poor to comply with his motion. For the present time he does not seek to introduce compulsory dealing with those properties which being near the city limits may be at a considerable distance from the sewerage mains. His proposals seems to be well thought out and to be both practicable and of great public utility.

FACT VS. FICTION AS REGARDS ABOLISHING PROXIES VOTING.

The approaching election should decide definitely the question of whether the physicians of this province are to exercise the right of voting for themselves, or must continue to depute this duty to others some months or years in advance. Of the two parties in the present contest, the one favoring reform has openly declared itself for the abolition of proxies; the other, or Beausoleil party, claims that the abolition of proxy voting will lead to the disfranchise-

ment of three-fourths of the electors. This dogma has been reiterated by the adherents of the present governing body without their bringing forward a single fact to prove it. It is really remarkable what a repugnance to facts appears to prevail among the supporters of the present board. They shun fact as a cat does water, and suffer from a chronic inability to state things correctly.

We have felt it our duty to ascertain and compare the vote polled at elections in this province during the past ten years under the proxy system with that in Ontario, where proxies do not exist. There the system of voting by a ballot paper (sent by mail or otherwise to the District Returning Officer, on or before the day of election) has been followed for many years past. This system, we may remark, is the one recommended for adoption in this province by the Electoral Committee of the Montreal Medico-Chirurgical Society, as it attains the advantages of a direct vote with a minimum loss of time and a minimum of trouble.

From official information furnished us from the College of Physicians and Surgeons of Ontario we can state that in that province, when there is an active contest in any particular district, the vote polled often includes nearly every registered physician in the district. For example, at a recent election in a district containing 200 registered practitioners, the vote was 180, or 90 per cent. of the possible total. In another recent case, a district with 150 physicians actually polled every vote.

It thus appears that under a system which the supporters of the present Board declare will have the inevitable effect of disfranchising three-fourths of our physicians, we have official evidence that votes of 90 per cent. and upwards are not only possible, but actually recorded. On the other hand, when one is told that 75 per cent. will be disfranchised by the contemplated change, one might imagine that under the present system a much larger vote was polled. But when we count the vote polled at the triennial elections in this province during the past decade, under the proxy system, which the present Board seem unwilling to change, we find it to be absurdly small. Out of 1,300 licensed physicians, the highest total vote recorded in the case of those names happening to be on all the tickets has never exceeded 314, this number being reached once only (in 1892). So that, as a matter of fact, under the existing conditions 75 per cent. or more of our physicians have been practically disfranchised by the method of election now in vogue. Indeed, 232 votes in 1895 and 206 votes in 1892, as the total vote, is only about one-sixth of the electorate.

These figures show clearly, first, that it was the stay-at-home votes

which has saddled the Beausoleil party upon us for the last ten years, second, that at no time have anything approaching a majority of the profession in this province voted for this party. We leave our readers to draw their conclusions as to why the present Board represents that doing away with proxies will necessarily disfranchise any large proportion of the electors. Can the present Board, who claim to have studied the matter during the past ten years, know absolutely nothing about the election methods of Ontario and their practical working? What is there in the proxy system as controlled by a sympathetic registrar, which so enchants them? If they knew that the abolition of proxies instead of lessening the vote would increase it, why have all their programmes and circulars kept back this information, and continued to assert that the abolition of proxy voting will disfranchise a hypothetical three-fourths of the electors? Have they a presentiment that the actual three-fourths of the profession who have not voted during the past decade may be less blind to those little peculiarities on account of which the dynasty of Beausoleil I. is now threatened with destruction?

Local representatives who faithfully serve the interests of their districts will be far more secure if proxies are done away with, than at present. In Ontario, when the contest is not keen, where the profession are well satisfied with their representative, the vote may be small or the candidates may be returned by acclamation. But we hold that a larger vote can be obtained without proxies than with them, and we challenge those who state the contrary to bring forward facts and figures to prove their side of the case, though we fear they may have some difficulty in so doing.

MEDICAL LIBRARY OF THE MEDICAL COLLEGE, McGILL UNIVERSITY.

The Library Committee acknowledges, with pleasure, the following donations for the quarter ending February 28, 1898, from authors who have presented copies of their books to the Library:

J. A. Coutts, M.B. (Cantab.) F.R.C.P.—Some Aspects of Infantile Syphilis, 1897.

F. Currier, M.D.—The Menopause, 1897.

M. L. Halbrook, M.D.—Stirpiculture, or the Improvement of Offspring Through Wiser Generation, 1897.

G. Carl Huber, M.D.—Lectures on the Sympathetic Nervous System.

A. F. A. King, A.M., M.D.—A Manual of Obstetrics, Ed. 7, 1898.

Hermann Mynter, M.D.—Appendicitis and the Surgical Treatment with a Report of Seventy-five Operative Cases, 1897.

R. Tait McKenzie, B.A., M.D.—Barnjum Bar Bell Drill.

Thomas M. Madden, M.D., F.R.C.S.E.—Notes on the Special Hygiene (Physica and Mental) of Children and Youths, 1897.

Louis C. Parks, M.D., D.P.M.—Hygiene and Public Health, Ed. 5, 1897.

H. Powers, M.B., and Leonard W. Sedgwick, M.D.—Three Volumes of the Lexicon of the New Sydenham Society.

A. W. Mayo Robson, F.R.C.S.—Diseases of the Bile-ducts and Gall-bladder, 1897,

W. T. Slayton, M.D.—Medical Education and Registration of the United States and Canada, 1897.

J. C. Webster, B.A., M.D. (Edin.), F.R.C.P. Ed.—Diseases of Women, 1898.

Edward Woakes, M.D., assisted by Claude Woakes, M.B., etc.—On Deafness, Giddiness and Noises in the Head, Ed. 4, 1896.

Surgeon-General Sir Joseph Fayrer—The Life of Inspector-General Sir James R. Mart'n, 1897.

The Committee is also indebted to the following contributors :

Professor Adami—Medical Chronicle, Vols. 4, 5,7, 1896-7.

Professor Armstrong—Boston Medical and Surgical Journal, Vols. 134-135, 1896.

Professor Blackader—A Text-book of Practical Therapeutics, by H. A. Hare, M.D., 1898 ; International Medical Journal, Vol. 6.

W. Bretner, Esq., Roy. Com. Vacct., 1896.

Professor J. C. Cameron—American Journal of Obstetrics, Vol. 35 ; Obstetrical Transaction, Edinburgh, Vol. 21, 1896 ; Obstetrical Transactions, London, Vols. 37 and 38, 1896-98 ; Das Weib., by H. Ploss, 1887 ; Rivesta Quinceral de Anatomie, etc., 1896 ; Handbuch der Gerichtlichen Medecin, Bd. 3, 1882 ; Cyclopedia of the Practice of Medicine, Zieman, 19 Vols. ; American Gynæcological and Obstetrical Journal, 1896 ; Monchenr. Medical Wochenschrift, 1897 · Medico-Legal Pamphlets, bound ; Traité Pratique d'Accouchements, By Le Dr. A. Auvard, 1890.

Cornell University, 4 Vols.

Columbia University, 1 Vol.

Editors of the Johns Hopkins Hospital Reports, Vol. VII., 1898.

Editors of the Johns Hopkins Bulletin, 1897.

Editors of the Montreal Medical Journal.

Index of the Surgeon-General's Library. Vol. II., 1897.

Editors of the New York Medical Times, 1895 and 1897.

Editors of the Medical Bulletin, Vol. 17, 18, 19, 1895-7.

Editors of the Universal Medical Journal, 1895.

Editors of the Chicago Medical Recorder, 1897.

Editors of the Dominion Dental Journal.

Editor of the New York Eye and Ear Infirmary, Reports, Vol VI.

W. F. Hamilton, M.D.—Reports of the Montreal General Hospital, 1860-93.

Vaughan Hasley, M.D.—Report of the Department of Pathological Chemistry, University College, 1897.

Dr. Hayes—Report of the West Reading County Council.

King's College Hospital Reports.—Complete set.

Allen MacFadyen, M.D., B.Sc.—Transactions of the British Institute of Preventive Medicine.

Library of the Ramsey County Medical Society, St. Paul.—Annals of Surgery and University Medical Magazines.

Revue Mensuelle de l'Ecole d'Anthropologu de Paris.—Editors.

Professor Shepherd.—Transactions of the Congress of American Physicians and Surgeons, 1897 ; Journal of Cutaneous and Genito-Urinary Diseases. Vol. XV, 1897 : Canada Medical Record, Vol. XXV, 1896-7 : Archives of Pediatrics, 1897 ; Transactions of the College of American Physicians.

Mr. Cresswell Shearer.—Elements of the Comparative Anatomy of Vertebrates, from the German of R. Wiederrhein, by W. N. Parker, 1886 ; Microtomists Vade-Mecum, 1893.

Professor Stewart.—A Text-Book of Physiology and Practical Diagnosis, by H. A. Hare, M.D., B.Sc., 1896 ; Lectures on Nervous Diseases.—By Ambrose L. Ranney, 1889 ; Experimental Pharmacology.—By L. Hermann. Translated by R. M. Smith M.D., 1883 ; A Manual of Organic Materia Medica.—By J. M. Maisch, Ph.M., 1895 ;

Applied Anatomy of the Nervous System. By A. L. Ranney, A.M., M.D., 1888; A Practical Treatise on Materia Medica and Therapeutics.—By R. Bartholow, M.A., M.D., 1887; Clinical Therapeutics.—By Professor Desjardin Beaumetz. Translated by E. P. Hurd, M.D., 1885. Therapeutische Monatshefte, 1889; Infectiousness of Milk, 1895.

Saint Thomas Hospital Reports for 1896.

Society of the Lying-In Hospital of the City of New York.—Medical Reports for 1897.

State Board of Health, Mass.—1897.

Studies from the Department of Pathology, College of Physicians and Surgeons, N.Y.—1896-97.

Transactions of the American Ophthalmological Society, 1897.

Transactions of the American Orthopedic Association.—1897; Transactions of the American Laryngological Association.—Vol. XIX; Transactions of the Congress of the College of Physicians—Philadelphia, 1897.

Transactions of the Clinical Society of London.—Index. Vols. 1-30.

Transactions of American Physicians and Surgeons.—1897.

Transactions of the South Carolina Medical Association.—1897.

Transactions of the Medico-Chirurgical Society of Glasgow.—1897.

Transactions of the Michigan State Medical Society.—Vols. 1895-96-97.

Transactions of the Ohio State Medical Association.—1897.

United States Department of Agriculture.—Reports and Pamphlets.

University of the State of New York.—I.

Dr. J. C. Webster.—Teruatologia, Vol. I, 1894.

Westminster Hospital Reports, Vol. X.

Pamphlets have also been received from the following doctors:

Dr. Gould, Dr. Musser, Dr. Shepherd, Dr. de Schweinitz.

Several portraits have been added to the collection in the Library by the following gentlemen:

Col. Crawford has presented the portrait of J. Crawford, M.D., Professor of Medicine, McGill. Dr. T. G. Roddick, M.P., the portrait of W. McCulloch, M.D., Professor of Midwifery at McGill. The Proprietors of "*The Lancet*," the portrait of L. Wakley, M.D., Founder of "*The Lancet*."

NEW BOOKS, ETC., RECEIVED AND NOTED.

Yellow Fever in the West Indies. By Izett Anderson, M.D., Edin. London, H. K. Lewis, 1898.

Inflammation of the Bladder and Urinary Fever. By C. Mansell Moullin, M.D., Oxon., F.R.C.S. London, H. K. Lewis, 1898.

The Diseases of the Stomach. By William W. Van Valzah, A.M., M.D., and J. Douglas Nisbet, A.B., M.D. Philadelphia, W. B. Saunders, 1898.

International Clinics. Edited by Judson Daland, M.D., J. Mitchell Bruce, M.D., F.R.C.P., and David W. Finlay, M.D., F.R.C.P. Philadelphia, J. B. Lippincott Company, 1898. Vol. 1. 8th Series.

An American Text-Book of Genito-Urinary Diseases, Syphilis and Diseases of the Skin. Edited by L. Bolton Bangs, M.D., and W. A. Hardaway, A.M., M.D. Philadelphia, W. B. Saunders, 1898.

Report on Bubonic Plague. By Khan Bahadur N. H. Choksy, Extra Assistant Health Officer, Bombay Municipality. Bombay, 1897.

The Johns Hopkins Hospital Reports. Report on Gynæcology. Baltimore, 1898.

The Analysis of Food and Drugs. Part 1. Milk and Milk Products. By T. H. Pearmain and C. G. Moor, M.A. London, Baillaire, Tindall, & Cox, 1897.

The Treatment of Sarcoma and Carcinoma by Injections of Mixed Toxins. By C. Mansell Moullin, M.D., Oxon., F.R.C.S. London, John Bale, Sons and Danielsson, L't'd. 1898.

The Roentgen Rays in Diagnosticating Arteriosclerosis. By Carl Beck, M.D. Reprinted from the New York Medical Journal. Jan. 1898.

A New Operation for H. Balanic Hypospadias. By Carl Beck, M.D. Reprinted from the New York Medical Journal. Jan. 1898.

Colles' Fracture and the Roentgen Rays. By Carl Beck, M.D. Reprinted from the Medical News. February, 1898.

Internal Cerebral Meningitis Chronica. Notes on Diagnosis and Treatment. By Elmore S. Pettyjohn, M.D. Reprinted from the Journal of the American Medical Association. April, 1898.

Solution of the Proprietary-Medicine Question. By C. C. Fite, M.D. Reprinted from the Philadelphia Medical Journal. 1898.

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXVII. JUNE, 1898. No. 6.

Original Communications.

ON THE STAGES AND FORMS OF SYPHILIS WITH MORE ESPECIAL REFERENCE TO THE HEPATIC MANIFESTATIONS OF THE DISEASE.[1]

BY

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It is remarkable how during all these centuries, syphilis has remained sharply distinguished from all other forms of human disease, constituting a class apart. There are many other contagious maladies, not a few chronic infectious disorders, and, now-a-days, we are able to group these together; we can recognise common principles governing their course and effects upon the organism, and can see, or think we see, a common principle underlying the morbid changes in one or other tissue from the onset of the disease to its culmination—a principle identical in the infant and in the aged. So we can with syphilis—only habitually we do not. We treat and regard it as a something distinct.

Take for instance that disease which in its chronicity as in the lesions which characterise it, most closely resembles syphilis—tuberculosis. From the onset to the end, at every stage, from the primary lesion to the most extensive generalisation of the process, we see one morbid change at work, namely, the focal multiplication of the bacilli leading to the development of tubercles. It is true that according to circumstances these tubercles may vary in their characters from a condition in which small cell infiltration is so extensive as closely to approximate to miliary abscess formation, through conditions of so-called epithelioid cell overgrowth to a state in which fibroid connec-

[1] Delivered at the meeting of the Ontario Medical Association at Toronto, June 1st, 1898.

tive tissue development is so excessive as to mask everything else, save, perhaps, necrosis and caseation. But the fact remains that we do not sharply differentiate successive stages of the disease, or consider that the successive stages are characterised by the development of specific manifestations. At the most, in one organ, the lungs, we trace such successive stages of the tubercular process, but we never think of laying down that what is to be made out in the lungs obtains for other organs, and for the body in general. On the contrary, a study of pulmonary phthisis alone has convinced us that the course of tuberculosis varies so greatly according to the interaction of two factors—the condition or reactive power of the tissues, and the virulence of the bacilli—that to attempt to plot out the course of the disease in each case into well defined stages is an impossibility.

With syphilis it is quite another thing. From Ricord onwards a primary, secondary, and tertiary stage have been clearly distinguished, and not only this, but according as to whether the disease is acquired in post-natal life, or has seized upon the individual while in the mother's womb, so do we recognise two different types of the disease.

There is, I take it, no more firmly 'fixed idea' in the whole of medicine than that of the absolute existence of these different stages and forms of syphilis. To-day, I do not want to pose as a revolutionist and an iconoclast, for speaking broadly, and regarding the bulk of the evidence before us, I, like all others, must acknowledge the utility of the divisions. But there is a danger in these fixed ideas, in medicine as in all sublunary affairs, and, to say the least, it is of benefit occasionally to enquire whether what is accepted of all men is so absolutely and entirely fixed and assured as we are accustomed to regard it.

What I am about to say is not novel. The unity of syphilitic lesions has been preached for now more than thirty years, in fact, ever since Wagner pointed out that all such lesions might be referred to the developments of a specific neoplasm. Perhaps Wagner went too far, for there are generalised fibroid conditions, which, as I shall have to point out in connection with the liver, are not directly due to the development of circumscribed neoplasms; but it must be acknowledged that neoplasms or infective granulomata are to be recognised in each stage and form of the disease. Nevertheless, the idea of the sharp demarcation of the different forms and stages of the disease seems to be as firmly planted to-day as it was prior to 1864, and the admirable protest of Nevins Hyde[1] and the writings of others do not seem as yet to have influenced the profession in general.

[1] Morrow's System of Genito-Urinary Diseases, Vol. II., 1893, p. 20, *et seq.*

At the outset, I must point out that it is not even necessary to have any recognisable first stage or cutaneous chancre. We know well, that in every case of infection, the infectious agent must make an entry from without into the tissues, and in a great number of cases we can discover the point or points of entry, and at such point or points we find evidences of primary local infection, whether on the skin or mucous membranes, and this local infection is strictly comparable with the cutaneous syphilitic chancre. But we also come across cases in which there is a complete lack of evidence of such superficial primary infection: we may find, for instance, the cervical or mesenteric lymph glands affected with tuberculosis without a sign of tuberculosis of the pharynx or tonsils or intestinal mucosa, cases which usually, though mistakenly, are spoken of as 'cryptogenetic.' What occurs in other diseases must at times occur in syphilis, and in going over my post-mortem records, in which to each case, I have subjoined a record of the clinical history of the case, I have been struck several times by observing that where well marked tertiary syphilis has been present in the organs, there has not been a sign of old penile or other chancre,[1] and more than once, in following up the clinical history by finding that while the patient has freely admitted that he has led a loose life and suffered, it may be several times, from gonorrhœa, he has denied ever having suffered from chancre (vide case III). Now presumably an individual who had had a hard sore would not wholly forget the circumstance, nor is it rational to urge that a hospital patient who admits without constraint that he has led a life of excess and suffered from other venereal diseases, would conceal the previous existence of a chancre. Either then the chancre was so small and inconsiderable as to cause no inconvenience, or the virus gained entry into the system without causing any cutaneous disturbance.

In the female this absence of any superficial or recognisable first stage is especially noticeable; time after time the disease only manifests itself in the secondary stage. I would go so far as to say that the 'fixed idea' that there must be a chancre developed at the region of primary infection, has led to a thorough and general misunderstanding as to the nature of congenital syphilis. It is a popular fallacy to regard a considerable number of cases in which the father of

[1] In some at least of these cases without doubt, the same process has happened as occurs occasionally in connection with vaccinal cicatrices, namely, there has been so complete absorption of the cicatrical tissue, that the part becomes in the course of years absolutely normal in appearance. This complete absorption I need scarcely say, is characteristic of primary lesions of mucous surfaces, and is very frequent in the female.

syphilitic offspring is syphilitic, and the mother is apparently free from the disease, as due to the sperm being syphilised, or if this view be carried to its logical conclusion, it is supposed that the spermatozoon bears with it the syphilitic virus, be it bacillus or whatever the nature of the specific microbe, and introduces it into the ovum at the moment of conception, and thus the offspring develops, syphilised from the start, the mother being and remaining absolutely free from taint. This, as I say, is a popular fallacy. But it is incredible that the germ gain entrance into the spermatozoon, for the spermatozoon being nucleus and flagellum, and scarce anything more, has not the means of ingesting foreign bodies, while we have not a shred of evidence that the syphilitic germ is amœboid and capable of making its way into the spermatozoon.

It is likewise outside the limits of credibility that a virulent organism could be within the minute almost yolkless segmenting human ovum, lying latent in one or other of the cells, the products of segmentation. Such passages of pathogenic microbes on to the surface, and possibly into the eggs, may occur in insects, as Pasteur demonstrated, but the insect's egg contains relatively abundant yolk, and segmentation then may be little influenced by the presence of the micro-organism, provided that this be in the yolk. Even then, I doubt whether the embryo could develop properly, and am inclined to consider that a more reasonable explanation of Pasteur's observations upon the silk worm's eggs is, that at a relatively late period of their development those which come to maturity become tainted either from the surface or from other eggs which have been killed by the multiplication of the germs within them.

If the syphilitic virus gained entry into the unsegmented human ovum, its effects would surely be to lead to the destruction of the ovum. Fœtal syphilis must originate at a later date, and although syphilis in the parents may doubtless have its effects upon the ovum and spermatozoa of the same, and lead to constitutional disturbances in the offspring, progressive syphilitic lesions, the true syphilomata, in the fœtus and infant are *not* inherited, but are congenital, that is to say, acquired in utero after conception. Or in other words, inherited and congenital syphilitic lesions are two very different things. Thus to return to the main point, if the mother be without sign of syphilis, and the child be syphilitic, the only satisfactory explanation is, that the syphilitic virus has entered into the maternal organism and tissues, and has failed to induce any characteristic lesion at the point of entry, but has, nevertheless, through the placenta and chorionic villi gained an entrance into the fœtal tissues ; the process arrested

in the mother has been developed in the susceptible tissues of the child, and we have here an interesting example of the variability in the manifestations of the disease dependent upon the reactive powers of the tissues.

Were any further word necessary in support of this contention it would be found in the significant way in which the liver is affected in congenital syphilis. Extensive specific lesions of the liver in the acquired disease are relatively uncommon. They are the most common of all lesions in the congenital affection. As Chiari has pointed out, out of 144 cases of congenital syphilis examined by him, the liver was diseased (and that extensively) in 123 cases or nearly nine-tenths. Were the ovum infected it would be difficult to explain why the liver should thus be especially singled out. When we remember that this organ is the first to receive the blood coming by the umbilical vein, then if the infection originates from the placenta hepatic implication is the natural sequence.

The essential difference between such congenital, or ante-natal, and 'acquired,' or post-natal syphilis is, that in the former the virus passes immediately into the blood and so becomes disseminated through the organism, in the latter, the dissemination is delayed. The second stage of acquired syphilis, is the first stage of the congenital disease.

Again, although as a pathologist not in practice, I have not met with and am little likely to come across the condition, continuing the analogy between tuberculosis and syphilis[1] we must, I hold, admit the inherent probability of Kaposi's statement that it is possible to have a primary cutaneous syphilitic lesion, a true specific indurated chancre, not followed by any secondary effects. And further it is well established that women who have borne syphilised children and have themselves shown not a sign of primary or secondary manifestations may, years after, present unmistakable tertiary lesions.[2]

Up to this point, therefore, it may be laid down :

(1) That from analogy, as from clinical history and absence of any indications of the same, in sundry cases there may be an absence of the primary cutaneous or epithelial manifestations of syphilis.

(2) That individuals may fail to present either primary or secondary symptoms that are recognisable, and yet eventually develope definite tertiary lesions of the disease.

(3) That where the subject is relatively insusceptible, it is possible

[1] Every pathologist knows, many from personal experience, how frequent among those performing autopsies are cases of strictly localised cutaneous tubercles not followed by extension. Such primary cutaneous tuberculosis is characterised by its tendency to remain localised.

[2] Vide Finger, Arch. f. Dermat. u. Syph. 1890, p. 331.

that the disease may be limited to the primary cutaneous manifestation not followed by secondary lesions..

(4) That as with tuberculosis so with syphilis, the congenital form of the disease begins at what may be termed the secondary stage of the acquired disease, *i.e.*, the stage of general dissemination of the virus through the organism.

The Relationship between Secondary and Tertiary Syphilis.

I would now pass on to consider the relationship between the secondary and tertiary stages of syphilis.

Where in any infectious diseases we have widespread eruptions, affecting both skin and mucous membranes, we now feel assured that such eruptions are due either to the irritation set up by the actual presence and growth of the specific germs of that disease in the subcutaneous and submucous layers, or to the irritation produced by the products of these germs growing in other parts of the system. And the more we study infections of which we can isolate the specific microbes (streptococcus and pyococcus infections, typhoid, &c.), the more we find the first of these alternatives in force, and in the case of syphilitic eruptions, the fact that the cutaneous eruptions are infective, affords clear evidence that the specific virus is present in them.

Such generalised infections of the skin and mucus membranes can only be brought about through the agency of the blood stream, or, otherwise, what is termed the secondary stage of post-natal, acquired syphilis, is the stage of general dissemination of the virus through the system by the blood stream, and of the more immediate results of such dissemination. What has been described as the second period of incubation (the interval elapsing between the development of the chancre and the appearance of syphilodermiæ) is the period requisite for the virus to infect and traverse the lymphatic system on its way from the primary lesion into the blood stream, and then to proliferate in the cutaneous and other tissues up to such a point that eventually it produces a reaction.

It is usually held that the syphilitic virus now especially affects the skin and mucosæ, and that the abundant and varied crop of syphilides—of syphilodermiæ—are the peculiar sign of the second stage, gummatous and more fibrous growths being characteristic tertiary developments. Certainly the eruptions are the prominent features of the secondary stage, but it is too much left out of account that in the early stages of generalisation of the disease, the internal organs may be, and perchance often are, affected. And what I wish more especially to bring before you this evening is this lack of sharp definition

between the anatomical changes in early and late generalised syphilis. This lack is well shown by a study of the syphilitic liver ; indeed, it is a study of several cases of syphilitic hepatitis which have been revealed in the post-mortem theatre at the Royal Victoria Hospital during the last four years, which has prompted me to select this more general treatment of the stages and forms of syphilis to bring before you this evening.

The reason why tertiary and secondary syphilis are regarded as so widely distinct is not difficult to comprehend. The disease is rarely directly fatal, especially now-a-days, and it is rarely that we obtain an opportunity to study the viscera during the earlier stages. As Jonathan Hutchinson has pertinently remarked : "The visceral pathology of the secondary stage might form a chapter in the history of syphilis which has not yet been written, and for which we possess few data. It is however, I feel sure, a great mistake to state that there are none to be obtained." In the address from which I take these words, an address which opened a celebrated discussion at the Pathological Society in London in 1876, he pointed out that abundant facts are on record to disprove the assertion that large gummata are not to be seen in the secondary stage. He noted that two cases of death from syphilitic disease of the heart which had come under his notice, had both occurred during the secondary stage and presented myocarditis with gummata, and in one of the two there were also distinct gummata in the spleen and in the testes, while he went so far as to state that the best example of gumma in the liver which he had encountered was in an infant.

To bring forward the evidence presented by the liver as to the identity of the anatomical lesions in the two stages, and as to the continuity or unity of the disease, it will be well to discuss the ways in which the liver is affected in syphilis and run over the different forms of specific hepatic lesions.

It is difficult to realise that scarce fifty years have elapsed since it was first clearly established that the liver is affected in any form of syphilis. The chapter in medical history bearing upon the liver in relation to syphilis is of some interest. Hutten and Fallopius and many of the earliest writers upon the morbus gallicus, held that syphilitic ulcers wherever appearing were the result of a corruption of the humours, the origin of which was to be looked for in the liver which had become diseased from the action of a volatile contagion. Others held that this organ was the first to be affected consecutively to disease of the genital organs. This was when every disease was regarded as due to a disturbance of the humours, and the liver being large and

of unknown functions, the severity of the disease almost naturally led to the liver being seized upon as the guilty party in syphilis When autopsies became more frequent the implication of the liver became seriously disputed : Paracelsus denied that it had any rôle in disease, stating that he had frequently found other organs affected but had rarely met with any disturbance of the liver. Morgagni again in the middle of the eighteenth century, but expressed the views of his contemporaries when he denied any relationship between syphilis and hepatic disorders.

The Liver of Congenital Syphilis.

Only in 1848,[1] or according to Hutinel and Hudelo in 1847, was there published any serious study of the liver in syphilis, and then it was not the characteristic gummatous liver of the acquired disease, but the enlarged liver of the congenital condition to which attention was called. In that year and yet more fully in 1852, Gubler described the liver of congenital syphilis, pointing out its enlargement, its firmness and elasticity. He noted that the changes were often in circumscribed spots only, and here in these very earliest careful studies upon the subject, he pointed out that while the other lesions in the infant were of a secondary nature, the changes in the liver were of tertiary type and allied to the gummatous developments.

Time forbids that I should describe minutely the histological changes occurring in the liver of congenital syphilis. You will find them clearly stated in an article upon diseases of the liver by your distinguished confrère Dr. Graham, in the recently published Loomis-Thompson System of Medicine, an article which is far and away the best treatise on hepatic disorders by a single individual that has appeared in our language for many years. Suffice it to say that the affected portions of the organ present a combination of the development of minute, somewhat ill-defined collections of small round cells, which we know as miliary gummata, together with a wide-spread development of fibrous tissue, not only along the portal sheaths, but also spreading between the groups of liver cells which present more or less atrophy, in short, a condition of pericellular fibrosis. This fibrosis is in itself what we are accustomed to regard as a peculiarity of tertiary syphilitic manifestations. Yet here it occurs within a very few months of the primary lesion, when cutaneous eruptions and other secondary symptoms are abundant. And not only this, but at times we have appearances more closely resembling the gummata of the acquired disease.

[1] Gubler, Gaz. des Hop. Jan. 1848, and Gaz. Med. de Paris, 1852, p. 262.

What is the meaning of this general interstitial fibrosis, or more correctly, what is the series of changes which leads to its formation? It is difficult to state with precision. At times it appears to be wholly in excess of any development of the above mentioned miliary gummata. Indeed, it looks as though it had not been preceded by any characteristic syphilomatous lesion, and the peculiar manner in which the connective tissue development extends between the rows of the liver cells, and becomes pericellular, and *pari passu* the liver cells show evidences of atrophy, would seem to indicate that here we are dealing with, not so much the results of the productive granulomatous inflammation, as with a process of tissue disturbance set about by the diffusion throughout the system of the toxic substance generated by the virus. These toxines lead to the atrophy of the liver cells with synchronous development of connective tissue; in short, the appearances are largely, but by no means entirely, those of a replacement fibrosis.

A somewhat similar condition is occasionally to be met with in the kidney and that in the earlier stages of the disease. The only further point I need impress upon you here is that this generalised fibroid change may be developed in the earliest stage of the generalised disease, and by no means necessarily indicates a tertiary condition.

In some rare cases this extensive fibroid condition appears to be present with very little evidence of syphilomatous or granulomatous change in the organ. Marchand[1] has recently described and collected together about half a dozen examples of this condition. Curiously enough, this form of cirrhotic liver with atrophy in most of the cases has occurred in one of a pair of twins and that one still-born. It is also associated with evidences of profound hepatic disturbance in the shape of icterus. Marchand's cases are not wholly satisfactory so far as regards the history of syphilis in the parents, but, as he states, it is difficult to explain this remarkable condition of atrophy of the organ with extreme fibrosis, save on the supposition that the cases were syphilitic.

Coming now to the presence of gummata, Gubler noted in his earliest communications that scattered through the cirrhotic areas in the infantile liver were numerous fine paler flecks, which he likened to grains of semolina, and Virchow, studying these, spoke of them as miliary gummata. More and more evidence has accumulated as to the relationship between these minute, ill-defined tubercles or collections of small round cells, and the caseous gummata seen in the acquired disease. The relationship is identical with that between

[1] Ctbl. f. Allgem. Path., Vol. VII., 1896, p. 273.

miliary tubercles in the lung, and encapsuled tubercular caseous nodules in the same. In the great majority of cases, the liver of congenital syphilis presents the admixture of a diffuse pericellular cirrhosis and scattered miliary gummata. Sometimes the whole of the organ is affected, at other times the process is observed only in parts, either at the edges or in a portion of one lobe. In this latter case, one has circumscribed yellow masses sharply defined from the, in general, congested, but otherwise unaffected hepatic tissue. Sydney Coupland,[1] indeed, goes so far as to regard these circumscribed masses as enormous gummata. It is, however, open to doubt whether these masses strictly conform to our idea of gummata, although I must confess that it is difficult to define with precision what we include under this term. For myself I am inclined to regard them as more nearly resembling the large nodular syphilomata occasionally to be met with in the adult liver, where they may be so well defined as time and again to lead to the erroneous diagnosis of non-infective neoplasms.

There are frequent cases on record in which true gummata have been recognised in the liver within a few weeks after birth. Several French cases will be found quoted by Hutinel and Hudelo[2] in 1890, while Cohn in 1896 quotes several German authorities.[3] In English literature, I have found cases described by Canton,[4] (in an infant of two weeks, with numerous small gummata), Barlow[5] and Hutchinson (loc. cit.)

In Barlow's case the child showed no syphilitic symptoms until it was seven weeks old; it died five weeks later, and upon the upper surface of the liver were several depressed areas, varying in size from that of a pea to that of an almond, one having a slight tail-like prolongation; there were a few also upon the under surface. As he points out, from these depressions it is clear that the gummata were, as he terms it, *receding*, although it would seem clear that they presented no central caseous change.

From the above description it would seem that in the liver of the new born infant, presenting externally evidence of what is known as as the secondary stage of the disease, there may be several varieties of syphilitic manifestations :

1. Well defined gummata.
2. Admixture of miliary gummata, with generalised fibroid change

[1] Trans. Path. Soc.- London, Vol. XXVII., 1876, p. 303.
[2] Arch. de Med. Experimt, 1890, Vol. II., p. 509.
[3] Virchow's Arch., Vol. 146, 1896, p. 468.
[4] Trans. Path. Soc., Vol. XIII,, 1862, p. 113.
[5] Trans. Path. Soc., Vol. XVII., 1876. p. 292.

not affecting the whole organ but forming relatively large circumscribed areas.

3. Admixture of miliary gummata and generalised fibrosis affecting the whole organ, which is in consequence enlarged.

4. Generalised "atrophic" cirrhosis without much evidence of gummata, but associated with icterus, œdema, etc., the organ being granular and definitely contracted.

In other words all the changes seen in congenital syphilis are those which ordinarily are considered to characterise the tertiary rather than the secondary stage of the disease.

There is yet another form of congenital syphilis which has to be noted; the form termed "Syphilis hereditaria tardiva" or more correctly, delayed congenital syphilis. Several examples of this delayed syphilis are on record; it is to be made out from them that frequently the cutaneous changes may not show themselves for years after birth. Taking up more especially the English literature upon the subject, Henry Morris [1] has described a case of a girl aged 20 with marked syphilitic family history and evidences of interstitial keratitis, who had suffered from sore throat at 12, enlargement of the liver at 18, ascites at 19, and at the autopsy, the liver was found much puckered and deeply fissured as well as altered in shape, while there were several large gummatous nodules imbedded in different parts of the organ. Wills[2] records a case that seems somewhat more definite, in which a male, aged 22, presented a small dense liver with thickened capsule, which was constricted into lobules by numerous thickened bands of connective tissue, a condition which he could only explain as being due to congenital syphilis. Bristowe describes a condition of gummata in the liver of a boy of 15 which gave way to treatment with potassium iodide, a condition which he could only regard as an excellent example of the results of delayed congenital syphilis; and Osler, in his well known Lectures on the Diagnosis of Abdominal Tumours, gives two cases which are similar, one of his own, the other which had been recorded by Dr. A. C. Wood, in the University Medical Magazine, Vol. II. Both of these cases were in boys of 13, presenting clear evidence of congenital syphilis; in both there was the enlarged irregular liver which diminished under the action of potassium iodide. A further case in a male, aged 22, has just been published by Post and Councilman.[3]

It is clear then that congenital syphilis, like the acquired disease, can manifest a tertiary stage long years after infancy, and that the

[1] Trans. Path. Soc. Vol. 21, 1870, p. 214.

[2] Liverpool Medico-Chirurgical Journal, July, 1892.

[3] Boston City Rep., 1898, p. 233.

tertiary symptoms when thus delayed are liable to be of the gummatous type with cicatricial contraction. In other words, congenital syphilis may in every respect follow a course identical with that seen in the acquired.

The Liver of Acquired Syphilis.

Passing on now to consider the syphilitic manifestations in the disease of post-natal acquirement, it is very interesting to notice that whether we are dealing with cases in which death has occurred within the first year after the disease has been communicated to the individual, or whether we obtain the liver long after the acquirement of the disease, the morbid changes are of the same order, the only recognisable difference being that the longer the time that has elapsed after infection, the greater is the tendency to the development of cicatricial changes with contraction and deformity of the organ.

Taking up the hepatic disorders in series, perhaps the earliest disturbance that has been noticed with common frequency is the development of icterus in the early secondary stage. The association has been noticed by several writers. Hilton Fagge, writing in 1867, was able to quote Portal, Ricord, Gubler and Lancereaux upon this point, and noted that Lancereaux alone had collected 21 other descriptions of the connection, and, intermittently, observers have since described the association which is now generally recognised. The last writers upon the subject are Neumann, Joseph, and Uhlmann.

Inasmuch as patients have very rarely died in this stage, it is impossible to state with precision what is the condition, but by analogy with what occurs in the infantile liver, it may be suggested that there is here a generalized toxic disturbance of the organ, with catarrhal hepatitis, which may or may not lead on to the generalised fibroid state which has been described in connection with the infantile liver. Indeed, Hilton Fagge[1] has recorded a very interesting case of what he terms yellow atrophy of the liver consecutive to a diffuse change in the organ due to acquired syphilis. The case is that of a female of 23, in which there was a history of syphilitic rash with falling off of hair, and macular syphilides. Jaundice appeared to be of the obstructive nature. The patient became drowsy, then unconscious and comatose. At the autopsy, the liver weighed 46 oz., and was of an opaque bright yellow colour, and of dense consistence. The surface was mottled, the left lobe resembled very closely that of the infantile syphilitic liver; it was pale and semi-pellucid, and the parenchyma was replaced by connective tissue; there was no amyloid reaction.

[1] Trans. Path. Soc., Vol. XVIII., 1867.

Here then we have the jaundice, associated with the generalised atrophic condition of the organ, which in the absence of full microscopical description, may be taken to be either closely allied to the atrophic form already mentioned in the infant, or to the general pericellular fibrosis with miliary gummata seen in same. Without deciding positively to which form this case belongs, I would point out that generalised change in the organ is more common than I think is generally recognized.

The gummatous syphilitic liver is so characteristic and so well-known a form of hepatic disease, that now-a-days, it is rarely described, save from previous authorities, and thus in general, once gummata are recognized in the liver not much further interest is taken in the case ; thus the old classic descriptions and ideas are perpetuated.

It is generally laid down that in tertiary syphilis affecting the liver, gummata, whether well marked and caseous, or the cicatrised remains of such with well-formed stellate surrounding of fibrous bands are the characteristic changes in the organ, while a condition of generalised and pericellular cirrhosis is wanting. It must, however, be remembered that even years after the primary infection such cirrhotic change may be recognisable, and not a few cases are on record of such a condition.

In three out of eight cases of tertiary syphilis affecting the liver which have come to the post-mortem room at the Royal Victoria Hospital during the past four years, there was clear and fairly extensive pericellular fibrosis along with gummatous change. The fibrosis, it is true, was not generalised over the whole liver, the condition more nearly resembled a condition of circumscribed fibroid change seen in the infantile liver.

These three cases are of some interest as throwing light upon the hepatic changes. In one case there was no clear history given of the date of infection.

Case I.—Male, æt. 35. The patient became anæmic and emaciated in April, 1895, œdema and ascites supervening, and death occurred early in July. There was albuminuria and the œdema of the legs had been complicated with an erysipelatous condition which seems to have been directly caused by the hepatic disturbance, for the heart was fairly normal, and the kidneys although large and white, showed scarce any sign of interstitial change. The liver showed numerous large deep stellate cicatrices with some diaphragmatic adhesions. The organ in general was soft with advanced fatty nutmeg condition. Sections through the cicatrices showed a characteristic gummatous appearance with large bands of fibrous tissue running deeply. Microscopically, there was a considerable amount of pericellular cirrhosis in the neighbourhood of the gummata with much small-celled infiltration. The spleen was large, firm and congested. The stomach presented diffuse submucous hæmorrhages.

I shall return later to consider this condition of small celled infiltration. Case V. to be referred to later showed a similar condition.

In another patient of Dr. Stewart the condition was more widespread.

Case II.—The patient aged about thirty-seven, was infected 14 years before his death, and, although himself a medical man, had never undergone proper antisyphilitic treatment, on account of the intense gastric disturbance induced by mercury and potassium iodide. Four years after infection he suffered from gastritis and diarrhœa alternating with constipation and a condition of gastric disturbance and general malaise which continued at intervals for the rest of his life. It is to be noticed that there was a frequent development of a febrile temperature. Ascites and jaundice supervening in the middle of October he was tapped; the fluid collected again, and he died in the beginning of November.

At the autopsy, there was no sign of old ulceration or chancre; there was well marked jaundice; the heart was healthy in appearance, though there was moderate atheroma of the aorta. There were dense bands of adhesions between the diaphragm and the abdominal wall, and the liver was profoundly contracted and small, scarcely passing beyond the middle line. It had a puckered and coarsely nodular surface. The right lobe was especially contracted presenting frequent and well-marked gummata with surrounding cicatrices so that the surface was broken up into numerous small nodules of the large hobnailed type. On section there were numerous white gummata from two to four mm., in diameter scattered through the liver substance, and in addition there were relatively large areas of fibrosis here and there throughout the organ. The spleen was large, turgid and smooth, weighing 570 grammes.

Upon microscopical examination the organ showed well-formed caseous gummata with a zone of surrounding congestion together with a very general advanced interstitial fibrosis, somewhat irregularly distributed, in addition to the ordinary fibroid bands of tertiary syphilis. The bile capillaries were richly injected with inspissated bile, and the kidney showed a condition of parenchymatous nephritis.

The interest in this is, that here we have presented to us a progressive syphilitic disturbance not arrested to any extent by specific treatment. The amount of change in the liver was extreme, and as above mentioned, consisted in the development of numerous gummata, pericellular fibrosis and catarrhal hepatitis, with jaundice. Indeed, we have here an example of syphilitic infection of the liver in an active stage fourteen years after primary infection. The appearance of the liver in this case appears to throw light upon what is the true nature of so-called tertiary syphilis. This is not by any means a receding process. While the tendency of the disease is, as it were, to burn itself out, and while in the majority of cases, if properly treated, the virus is completely destroyed in the secondary stage, nevertheless there may be persistence of the virus, and under favourable conditions the disease may light up again. Here, in this case, the patient enjoyed very fair health from 1888 to 1893. Gastric and intestinal functions were well performed; he increased in weight, and led an active life. During this time the process was certainly arrested, then the malaise and indigestion returned, and the ascites and jaundice which supervened can only be ascribed to the progressive development of syphilitic disturbance in the liver.

The analogy between syphilis and tuberculosis in this respect is perfect. In about 30 per cent of our autopsies we come upon evidences of old tubercular cicatrices in the lungs, and in the majority of these cases the process is undoubtedly wholly arrested; thus we are dealing with healed tuberculosis. In some however, we see that the virus is still present in the encapsuled caseous masses, for we can in a certain number of cases cause the disease in guinea pigs by inoculating into them the caseous contents of the old tubercles, and again in some cases we can recognise that these tubercles have been obsolescent and not obsolete, for around them we can make out progressive tuberculosis evidently originating from them. Speaking of these cases in the language which we employ to syphilis, we might describe them as being examples of tertiary tuberculosis, or to put it otherwise, we include under the term tertiary syphilis, two conditions:

1. The cicatrices and fibroid changes which are indications of a previous syphilis now healed and obsolete.

2. The lighting up again of an obsolescent syphilis from old foci in which the virus has remained latent.

The two cases just recorded are examples of the latter condition, while the case which follows is one of several examples of the former:

Case III.—Male, æt. 49, who had led a wandering life in the South American States, Pacific Islands, and over the world since 25. Had suffered from all the diseases of childhood, gonorrhœa at 18, stricture five years later, yellow fever while serving in an American Army, small-pox and malaria when he was 19, had chronic dysentery about six years ago, was a heavy drinker of spirits, and had been a soldier, a sailor, and of late a backwoodsman; he denied having had a chancre. The cause of death was acute lobar pneumonia of the upper lobe of the right lung with purulent peritonitis.

The liver was deformed, weighed 1960 grammes, and showed four large areas of puckering on the upper aspect of the right lobe. A rounded mass 3 cm., broad and 2.5 cm. long projected from the lower end of the right lobe, the truncated end of which was characteristically puckered; the appearance of the organ was typically syphilitic. The intestines showed no signs of previous dysentery.

In this case, the section through the puckerings showed singularly little fibrous tissue despite the extreme contraction and deformity of the region where they were present. There were no proper gummatous areas to be made out, and the only satisfactory explanation is that in this liver which presented so obviously the appearance of tertiary syphilis there had been complete or almost complete absorption of the syphilitic deposits.

It may be suggested that the resemblance between tuberculosis and syphilis which I have thus emphasised is imperfect, in that when tuberculosis once affects the organ, the virus always remains latent in that organ, and there is not the complete absorption which we must acknowledge takes place in the majority of cases in syphilis. For

it is admitted that at the most (and that in untreated cases) only 30 per cent. of those infected show tertiary symptoms. Among those treated the percentage is only about 10 per cent. But this is another modern popular fallacy : there may be complete cure of tuberculosis and complete disappearance of the tubercles even when they have become distinctly fibrous. This is proved by the experimental infection of dogs with peritoneal tuberculosis and arrest of the process by repeated laparotomy. I need scarce remind you that it also has been recognised in some cases that there may be arrest of tubercular peritonitis in man by similar means. Definite cases are on record in which there has been a complete disappearance of well marked fibroid tubercles from the serous coats of the intestines. The analogy, therefore, between tuberculosis and syphilis must be regarded as complete in this respect.

Rarely we come across a syphilitic liver showing very clear evidence of the progressive development of the hepatic condition.

Case IV.—Such a case have I met with in a male of 28, who entered the Royal Victoria Hospital under Dr. Stewart with a rupture of one or more branches of the middle cerebral artery, and who had two years before been treated by Dr. James Bell for syphilis. Whether the syphilis then was primary, secondary, or of later manifestations I cannot ascertain, for the patient died before his history could be elicited. In this case there was syphilitic inflammation of the ventricles of the brain, and early atheroma of smaller arteries. The liver showed three or four puckered scars, and microscopically, fairly frequent gummata, with giant cells and small localised infiltrations of leucocytes. There were no signs of tuberculosis anywhere, and the sections of the liver stained with carbol-fuchsin did not show any tubercle bacilli. In this case, the puckered scars indicated gummata which had undergone cicatrisation and fairly complete absorption. The small infiltration of leucocytes can only be regarded as miliary gummata resembling in every respect those seen in the infantile liver of congenital syphilis. The case must be regarded as one in which, as shown in the ventricle of the brain and in the liver, the active syphilitic process had been rekindled or had progressed with rapidly fatal results.

Case I. was probably an example of the same condition.

The only manifestation of syphilis in connection with the liver which is to be found in the acquired and not in the congenital form is the condition of perihepatitis. I have not come across or met with in literature any indications of the development or presence of such a condition in the newly born child ; in the adult, more especially at the late stages, it is not very uncommon.

Out of the eight cases, I came upon it in a fairly extensive condition in a female of 62, in which syphilis must have dated back for 20 years, more or less, for she gave a history of having seven children, of which five were miscarriages, and the other two died in infancy. Here the most extensive syphilitic changes were in the neighbourhood of the longitudinal fissure and round the gall-bladder. An interesting point was the fact that a mistaken diagnosis was made of atrophic

cirrhosis with ascites. The capsule of the organ was throughout thickened, the upper surface very smooth, the abnormal lobulation and puckering. Near to the gall-bladder in the right lobe was a caseous nodule, the size of a filbert, showing some calcification on section.

Upon section, the organ showed a thickened fibroid capsule, many small central scars, caseous gummata, and more or less diffuse and apparently recent fibroid change. Here it should be added that during the last five months of her life, she had been repeatedly tapped, and following upon tapping, there was found at the autopsy a condition of sub-acute peritonitis with inflammatory lymph covering the intestines. Thus the perihepatitis might not have been entirely syphilitic indeed I am a little doubtful whether syphilis pure and simple will lead to the condition of generalised perihepatitis.

Case V.—Female, æt. 62, with a history of having had seven children, of which five were miscarriages and the other two died in infancy. The husband said to be phthisical. In 1895, Dr. Roddick removed an epithelial wart, which on examination was found to be non-malignant. Suddenly upon July 31st, 1895, while the patient was feeling in good health she had an attack of hæmatemesis which was repeated next day and again two days later. It was accompanied by melæna and great weakness.

Upon admission to the hospital in August, 1895, under Dr. Stewart, the patient was sallow and there were dilated venules on the face. The liver extended from the fifth rib, two and a half inches downwards; it was not palpable nor could the spleen be felt; there was a low systolic murmur. The urine was high coloured with a trace of albumin. While in hospital epistaxis occurred once or twice. This history together with the progressive loss of flesh, the sub-icteroid tinge, the abdominal swelling with epigastric pain, the slight œdema of the legs, led to a diagnosis of atropic cirrhosis of the liver; 270 ozs. of fluid were removed from the abdomen, and after removal the fulness in the epigastrium was found to be due to the hard large mass passing down to within 8 cm. of the navel. This mass, hard and rounded, was continuous with the right lobe of the liver. The fluid re-accumulated and the patient underwent numerous tappings. She became progressively weaker, and the hepatic tumour appeared to be undergoing progressive diminution.

After having left the hospital she was re-admitted early in January 1896, dying upon January 24th. The condition was thought to be one of atrophic cirrhosis with enlargement of the left lobe.

Autopsy.—Œdema of the legs; extensive ascites with distended abdomen. Upon opening, the visible intestines were found coated with lymph; the omentum which was fatty and œdematous was adherent to the parietes in several places. The liver presented numerous adhesions, especially to the intestines and surrounding organs, specially in the region of gall-bladder. The right lobe did not reach the costal margin, the left extended just below the xyphoid. The organ weighed 1425 grammes, its greatest breadth was 22 cm., the right lobe especially being contracted (breadth 10 cm.); this lobe was also diminished from above downwards, its length being 15.5 as compared with 19 cm., of the left lobe. The capsule was thickened; the upper surface fairly smooth with, however, linear indentations, but the under surface presented extensive abnormal lobules especially in the region of the gall-bladder and upon the right lobe, so that several small lobules of liver tissue were produced, and near to the gall-bladder a caseous nodule the size of a filbert showed some calcification upon section. The under surface of the left lobe showed numerous cicatrices, some distinctly stellate. The largest was close to the longitudinal fissure and was 3 cm. in diameter.

Upon section the organ showed many small central scars, caseous gummata and *more or less diffuse and apparently recent fibroid change*. There was further a moderate amount of chronic passive congestion and cholelithiasis with obstruction of the cystic duct. The organ gave no amyloid reaction, and the spleen was large, firm and tense, with thickened capsule. In addition there was fat necrosis of the pancreas, brown atrophy of the heart, moderate atheroma of the aorta, slight chronic pachymeningitis, emphysema and bronchitis.

It will be noticed that the most extensive syphilitic change was in the neighbourhood of the longitudinal fissure and round the gall-bladder.

Yet another case of syphilitic liver with great thickening of the capsule showed this same complication of peritonitis. In this case (a patient under Dr. James Bell) there had been recurrent attacks of appendicitis during the last four years, with much chronic fibroid typhlitis, and the patient died of acute peritonitis following operation. Although the liver showed numerous stellate scars with abnormal lobulation, these were on the upper surface and there had been no signs of hepatic disturbance. There were in addition moderate arterio-sclerosis and fibroid syphilis of the left testicle.

Case VI.—The patient, a male, entered for recurrent appendicitis and died of acute peritonitis following the operation Feb. 27th, 1896. Four years previously had had illness with symptoms of appendicitis. For five or six weeks before admission had dyspepsia, followed by right iliac pain beginning about Feb. 7th, kept at work till the 12th. Operation: Purulent appendicitis with perforation, followed by general peritonitis and death.

Autopsy.—Acute peritonitis with evidence of much chronic fibroid typhlitis. Liver large, surface very irregular, owing to great irregular thickening of capsule. Weight 2000 grams, numerous large superficial stellate scars with abnormal lobulation; greatest thickening about longitudinal ligament in front. On section, fairly firm, a few small internal cicatrices; portal vein and vena cava free; periportal glands free. Liver showed large periportal fibrous glands with thickened arteries and atrophy of some liver cells. Spleen, large 155 grams, 12.5 x 6.5 x 3 firm, soft and rather pale. Pancreas, hæmorrhages and necrosis. Other organs showed evidences of the acute febrile disturbance with moderate arterio-sclerosis and its effects; there was in addition fibroid syphilis of the left testis.

In the case of a male, æt. 75, the organ had the characteristically puckered appearance and showed upon the anterior surface of the right lobe a large convex cartilaginous plate, 9.5 x 7.5 cm., or about 4 x 5 inches, associated with chronic thickening of the capsule, together with numerous small cartilaginous plates elsewhere; the left lobe did not show much thickening of its capsule. The spleen, however, as is the rule in chronic perihepatitis, presented a much thickened capsule. (In this case there was very extensive gummatous hepatitis with practically no clinical evidence of affection of the organ.)

Case VII.—Of this patient, a male, æt. 76, under Dr. Jas. Bell, with cancer of the tongue and general arterio-sclerosis, there is no history bearing upon the date o infection.

Autopsy.—Emaciation; rheumatoid arthritis of fingers; slight icterus; retracted abdomen, abdominal cavity dry; liver 1335 grams, 21 x 16 x 8 cm, right lobe anteriorly and inferiorly broken up into several small lobules; at hilus five or six small accessory lobules between a bean and a walnut in size. On anterior surface of right lobe,

left superior angle, large convex cartilaginous plate 9½ by 7½ cm. associated with chronic thickening of capsule. Numerous small cartilaginous plates elsewhere on the right lobe, the left also broken up into several lobules. On section, organ fairly friable with here and there small fibrous strands of tissue intersecting collections of lobules. Spleen, capsule very much thickened, weight 240, enlarged 10.5 c 7.5 x 5 cm. On section, soft, with slight fibrosis. Other conditions: Cancer of tongue, arterio-sclerosis, sclerosed heart valves and coronary arteries, hypertrophy of prostate, hydronephrosis, chronic interstitial nephritis, etc. (This case again shows very extensive gummatous hepatitis with singularly little clinical evidence of the liver disease.)

In two other cases, there were localised adhesions between the organ and the diaphragm. These adhesions, however, bore no clear relationship to the areas of cicatrisation in the organ.

On the whole therefore I am inclined to regard diffuse chronic perihepatitis as more a complication than a direct syphilitic manifestation.

There is one further condition of syphilitic disturbance of the liver in the adult to which I have only referred in passing, and that is the development of large tumour-like outgrowths of the organ which are so sharply defined that clinically the erroneous diagnosis may easily be made of malignant neoplasm. These growths are distinct from the bosses produced by the cicatrices of old gummata and subsequent deformity of the organ, and under the action of potassium iodide, they appear to undergo fairly rapid absoption. Osler in the work already cited has described very clearly one of these cases. So far as I know, in the coarse lesion produced, there is nothing quite similar to this seen in congenital syphilis. Microscopically however, the mass shows a condition not unlike that seen in the circumscribed areas of fibrosis in the infantile liver. There may or may not be caseous or gummatous change in the centre. There is however, much central fibroid change with complete destruction of hepatic parenchyma, and towards the periphery there is a more vascular connective tissue area in which strands of liver cells are to be made out. The nature of the growth and the presence of these liver cells would appear to indicate that what we have to deal with in such cases is a focal syphilomatous change in which, as the process extends from the centre, there is, at the same time, a constant proliferation of the liver tissue, and thus gradually, there is the development of a localised mass of new tissue, in the main fibroid, but at the periphery, where the change is not so extreme, there is growing liver tissue.

With this I have, I believe, mentioned the main manifestations of syphilis as they occur in the infant and in the adult, and it will be seen:

In the first place that the lesions occurring in the congenital and

the acquired disease, are identical, and brought about by the same process or processes.

That whether we have to deal with the disease in the secondary or in the tertiary stage, the same processes are at work. That, if we except those cases as truly tertiary in which we have to deal merely with the fibroid remains of obsolete gummata, and again those cases in which there is perihepatitis (which perihepatitis appears to be a complication rather than the genuine and direct result of syphilis), then we are bound to admit that the study of the liver alone would indicate that no sharp boundary line can be made out between secondary and tertiary syphilis. No more can we make out such a boundary between secondary and tertiary tuberculosis.

While I and all others must admit the utility of recognising these two stages, from an anatomical and histological standpoint one is forced to acknowledge that progressive syphilis is characterised by the same succession of phenomena whether it be studied but a few months or long years after the primary infection. Anatomically and histologically there is no valid distinction to be drawn between secondary and tertiary syphilis.

It may be asked whether such a conclusion is not wholly at variance with clinical opinion and experience? Upon the face of it, it is —but if the subject be looked into carefully, I think that such a view will reconcile not a few of the divergencies existing among syphilologists. We have those (and they are the majority) who state that tertiary syphilis is non-infectious, and those who bring forward clear examples of the production of infection five or ten years after primary inoculation of the disease. This difference can be reconciled if we agree upon the following points:

1. That now-a-days, under proper treatment, syphilis, if not a self-limiting disease, is at least a disease which can be healed, so that many of the lesions recognised as being tertiary syphilis, are truly the indications of the old healed syphilis, and not signs of progressive or latent disease.

2, If the disease has not completely died out and remains latent, the resistance of the tissues of the organism is such that in the majority of cases if it does not tend to light up again; there is so considerable a local reaction, that the infection and consequently the spread of the process tend to remain strictly localised, and the germs (which are probably of bacillary nature) do not become disseminated through the blood. Thus neither the blood nor the secretions contain the virus.

3. In a very small number of cases, the reaction on the part of the

tissues may be so lessened, and the virus retain or gain so high a virulence that either it causes ulceration, or in other ways becomes disseminated and capable of causing infection even late in the tertiary stage.[1]

[1] After reading this paper, Dr. C. A. Temple of Toronto, brought to my notice an interesting example illustrating this point which he very kindly permits me to note here. The patient, a vigorous blonde, contracted the initial lesion five years before marriage, underwent mercurial treatment for four years, and later was treated by Fournier's intermittent method, generally for from six to eight weeks twice a year. His wife a highly educated and cultured woman never showed any symptom of syphilis. In the fifth year of marriage she became pregnant for the first time, and, ten years after the primary infection of the husband, she aborted at the seventh month, the fœtus showing the typical facial characteristics and a greatly enlarged liver. The husband had always tended to have syphilitic eruptions if he neglected treatment, and when last Dr. Temple saw him, after the abortion, there were scaling circinate lesions on the abdomen and groins and ulcerating patches, some ecthymatous, others healing, on both legs from the knee downwards.

HOSPITAL ABUSE.[1]

BY

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Hospital abuse is a familiar term in British and American cities, and not unheard on the Continent. A different signification, however, attaches to the term now, than did in the early part of this century. Formerly, the term "hospital abuse," "asylum abuse," "prison abuse," intimated that the treatment in the institutions was unkind, inefficient, unscientific. At present its meaning is altogether changed. The term hospital abuse has come to mean, when applied to the public, the seeking and acceptance of medical treatment from a hospital, by persons who are able but unwilling to pay for the same, and when applied to a hospital, the treatment without any or only a nominal charge, of those who are not fit objects of public charity.

Objection is raised by the giving public—the hospital supporter, that monies donated by them are improperly applied, and by the medical profession, that hospitals, supported by the charitable public, by treating free of charge, people who are able to pay, interfere with their earning a livelihood for themselves and their families, and both classes urge that the result is a lessening of self-respect and a lowering of the moral tone of those patients who are well-to-do.

Hospital abuse is a growing evil and has come to be one of the social questions of our day. The welfare of our profession is being seriously affected by the growing popularity of the out-patient departments of our hospitals. Complaint is made by members of our profession in many large English as well as American cities and the responsibility for the evil put upon Hospital Boards, Hospital Medical Staffs and the public. It is difficult, in fact impossible, to make very definite statements as to the proportion of people attending out-door departments, who are able to pay a moderate fee. One English writer puts it as high as 40 per cent. The New York State Board of Charities for the year 1897, reports as follows: "While statistics are often misleading and deficient, there are good grounds for believing that nearly 50 per cent. of the population of New York City obtains practically free medical treatment. Dr. Wiggin makes the following

[1] Read before the Montreal Medico-Chirurgical Society, May 9th, 1898.

statement in an article published in the Philadelphia Medical Journal, April 23, 1898, that, prior to 1870, the number of applicants for medical and surgical relief bore only the ratio of 1·5 per cent. to the total population, as against the present estimate of 50 per cent. and the number of applicants is increasing every year. In Montreal we are suffering from hospital abuse but to a lesser extent probably than in the large centres in England and in the United States. I am not aware of the existence of any statistics that I can place before you but from conversations had with the members of the different hospital staffs and with general practitioners not connected with hospitals, I am convinced that the evil of hospital abuse is with us, and in very considerable proportions. A physician told me a few weeks ago that he had visited the out-patient department of one of our city hospitals, and to use his own words, " fully half of the women present as patients were better dressed than I could afford to dress my own wife, and there were three fine seal skin jackets in the room." The evil is not limited to the out-patient department alone. In the public wards people are seen who are known to be worth from ten to a hundred thousand dollars.

Now let us try and find out if we can some of the conditions of things which have led up to this unhealthy state.

First, I should say is the increased efficiency, comfort, attractiveness, even luxuriousness, of the modern hospital-ward. Hospital architecture is now almost perfection. The public wards of a modern hospital are warm in winter, cool in summer, well lighted by day and night, perfectly ventilated, the beds are about the best, the food abundant and of excellent quality, and the nursing such as only the wealthy can afford in their own homes. What more could any one desire, except the exclusiveness of a private ward. It is not to be wondered at that people flock to these hospitals, particularly when they are invited to come " without money and without price."

Secondly, the rapid increase of hospitals in number and amount of accommodation. The wealthy and liberal have felt that money given to a hospital, almost any hospital, was well bestowed. The hospital when built and equipped must of course be filled, and but little care has been taken to determine the suitability of applicants for public charity. Hospital managers have apparently taken it for granted that the old time honour and independence of character still obtained, and that the willingness on the part of an applicant to accept free hospital and medical charity was sufficient evidence that they were needy and poor.

Thirdly, the increased number of hospitals has given rise, very

properly and naturally, to a laudable rivalry, each one endeavouring to attain the highest possible standard of efficiency and usefulness. But emulation has not stopped here. Hospitals have become anxious to excel also in the amount of work done, and in the number of patients treated, until there has grown up almost as much competition among them as among physicians for patients to treat.

Fourthly, the advances in medicine and surgery during the past twenty years have increased the expense of medical and surgical treatment. I need only to point out the increased expense of nursing. The perfection of nursing now attained has rendered apparent the want of it when it is not to be had. A physician to-day feels that he cannot do justice to a case of typhoid or pneumonia without a trained nurse. Trained nurses cost more than people of only moderate means can afford, if the illness is at all prolonged. Hence another reason for sending to the hospital. In surgery the same holds true to even a greater extent. For a major operation there are needed proper preparation of room, an anæsthetist, one or two assistants and one or two nurses. Thus it is seen that the dividing line between those who can and those who cannot pay is a moveable line and families who could afford satisfactory treatment in their own homes twenty years ago cannot do so on the same income, to-day.

Fifthly, the spirit of the times in which we live. This is essentially a commercial age. The acquirement of wealth, the love of luxury and display, are the gods worshipped by large classes in the community. People will buy pianos, bicycles and good clothes, who leave their doctor's bill unpaid or go to the hospital for free treatment when sick. And they will unblushingly accept medical charity before any other. True they can put up with many of the necessaries of life that are not the most expensive, and equally true that when ill they cannot afford anything but the best medical treatment and the best nursing, but this is not the principle that governs the actions of the class to whom I refer.

Sixthly, the starting of the modern abomination, the private dispensary and hospital, by members of our profession for purely selfish and personal reasons.

Lastly, hospitals dependent upon the public for support, must, to avoid alienating sympathy and subscriptions, sometimes receive into their wards those who are very well able to pay. For instance, a large corporation, a large employer of labour, skilled and unskilled, contributes a handsome annual donation. This corporation naturally expects that their employees when injured or sick shall receive prompt and proper attention. But when one of their foremen, earning per-

haps several thousand dollars a year applies for treatment, the attending staff sometimes feel that the annual donation should not be expected to secure free treatment for one so well able to pay. This foreman very likely is earning more, many times over, than the physician who is expected to minister to his needs. However, if objection is raised, a perfect whirlwind of correspondence is started, to be followed by explanations, and perhaps even apologies. This is not right, and I hold that it is quite within our province to object, and to try to promote views more in harmony with equity and justice to all both physician and patient.

Now, I think it will be evident to one and all that the blame for the evil of hospital abuse must be divided. It rests not wholly on the hospitals, nor on the medical staffs of the hospitals, nor on the public. It is an outgrowth of the conditions under which we exist. How can it best be remedied? The medical profession takes great credit to itself for the existence of our beautiful and efficient hospitals, and rightly so. It naturally follows then that we are responsible, chiefly for the evil, concerning which we hear such loud complaints. As physicians, as citizens, we should stand united in trying to arrest this growing evil which is demoralizing in its tendencies and inimical to the welfare of our profession.

It will be quite evident to any one at all familiar with the workings of hospitals, that no one hospital can act successfully alone, in combatting this evil. There must be concerted action. If an applicant refused treatment at one out-patient department can get the same at another out-patient department without any inconvenient questions being asked, no lessening of hospital abuse will be likely to ensue.

The suggestion of the London Charity Organization Society as outlined by Sir William Broadbent, is worthy of consideration. The proposal in a word, is the formation of a Central Hospital Board. The Board to be composed of representatives of the Management and of the Medical Board of each hospital, together with a few general practitioners who are not connected with any hospital. A Board formed on these lines would be thoroughly representative. It would bring together the three great classes concerned, the hospitals, the hospital medical staffs and the general practitioners. It would probably be well to have the representatives of the latter class selected from districts. Each man would naturally be familiar in a general way with the population of his district, their earning power and their ability to get constant employment, etc.

The formation of such a Board would remove any feeling that might otherwise arise. It would do away with any misapprehension

on the part of the public, that the action of the Board was prompted by practitioners or hospital staffs at enmity with hospital work. This is very important. Such a Board could employ an inquiry officer, who could inquire into the circumstances of any cases referred to him, and report to the Central Hospital Board.

I do not think that any one would desire that the first aid to the injured should be interfered with. Our ambulances do a good and highly appreciated work in rescuing accident cases and people prostrated by heat, or suffering from poisoning, and bringing them quickly to the various hospitals where appropriate treatment is immediately available. But after the first aid is rendered those able to pay should be referred to the personal or family physician.

In regard to nursing, which is an expensive luxury—or more truly an expensive necessity in many cases, and one of the factors contributing to the increase of hospital abuse, the establishment of the district nursing by the Victorian Order of Nurses and by others will be most helpful. In this way the aid of the trained nurse can be obtained once a day or oftener, to give a bath, assist at a surgical dressing, or to instruct willing home helpers in the care of the sick.

One other point and I will close. I cannot but feel that hospitals should confine their ministrations to the poor. I believe there is no dispensary that does as much harm as the one that collects 5 cents or 10 cents from each patient. The pauperizing influence of that method in my opinion exceeds by far the out and out free dispensary. In hospitals, the acceptance of 50 cents a day from a patient for what costs over $1.00 makes a patient feel that he is under no obligation to any one, either the hospital or the medical attendant, that he has a right to what he gets because he pays for it, and that he is perfectly at liberty to return on any future occasion for treatment on the same terms.

In my opinion it would be better if the hospital ministered to the needs of those who could not pay anything and to no other. Private enterprise may be trusted to see that those who can pay are not allowed to suffer.

It is the pay patient and the private ward patients that set the fashion, and popularize the hospitals. Once the hospitals are popularized, as soon as it becomes "the correct thing" to go to the hospital when ill, the next step is naturally and easily taken, viz., to get there as cheaply as possible.

I have tried gentlemen, to put this question before you in a true, broad and generous way, and I hope that in any discussion which may follow, general broad principles only will be dealt with. It is a very

complicated question. There are many different interests to be considered, and only by avoiding anything that might give offence to any one of those interests can good be got out of this evening's deliberation. Our society is very representative. It is made up of members of hospital managing committees, hospital medical boards and general practitioners. None of us wish harm to our hospitals, and none of us wish to put any obstacle in the way of their efficient working. Let us strive together to evolve some scheme that will root out the tares without injuring the wheat.

ON MILK DIET IN TYPHOID FEVER.[1]

BY

H. R. MACAULAY, Student in Medicine.

At the outset I wish it to be clearly understood that I am basing my remarks more particularly on the routine practice of our larger hospitals, and so far it will, I think, be granted that the course of treatment pursued at our Montreal hospitals is in line with that employed in the hospitals throughout the medically civilised world. It is at the larger hospitals, the centres of clinical study, that the young medical idea is formed, and therefore any routine treatment there observed is apt to be very generally adopted by the profession at large.

I have thought it wise to confine my ideas to this " routine treatment," as in so doing I will have something tangible on which to base my remarks.

Practically the milk dieting at all these hospitals is the same. The patient is given at least three pints of milk during the twenty-four hours. This quantity of milk is given to the patient in two-ounce doses or more, at periods of two hours apart. If the patient is awake when the clock's hands point to the expiration of two hours he gets his milk. If he is asleep he is allowed to remain so, unless in very exceptional circumstances, as when the attending physician does not think he has taken sufficient nourishment.

Now for some statistics as to the results in cases that were so dieted :

In 1896 the Montreal General Hospital had 93 cases with seven deaths, and of these, *three* were due to perforation.

In 1897 to date, Sept. 1897, the Montreal General Hospital had 54 cases with *four* deaths, and of these, *two* were due to perforation.

During 1896 the Royal Victoria Hospital treated 60 cases. No deaths, but eight relapses.

I was unable to get the percentage of relapses at the Montreal General Hospital.

These results are certainly highly satisfactory, are they not? It is enough to make one wonder whether with such a small percentage of deaths in this disease, the acme of both scientific and dietetic treatment has not been reached, and whether the milk diet as prescribed is not such that it cannot be improved upon.

[1] Being the introduction to a discussion upon " Treatment in Typhoid Fever " at a meeting of the McGill Undergraduates' Medical Society, Dec. 3rd, 1897.

Now, before going further, I would wish it to be fully understood that I am not decrying the use of milk in typhoid altogether. That is not my position; far from it. Without milk we would be deprived of possibly our greatest boon as an article of diet for the sick generally, including those suffering from typhoid; but what I do contend is that our diet in a typhoid case should not be so restricted. That it should not be confined to milk alone, milk every two hours, to-day, to-morrow and the day after; nothing but milk this week, next week and the week following.

Let us consider briefly some points concerning cow's milk as a diet: I will not weary you with details as to its chemical composition; suffice it to say that it contains all of the elements necessary to maintain life—infant life. The infant thrives and grows upon an exclusive milk diet, but what about the adult—the young man and young woman with typhoid? They have advanced beyond the infant stage. When in health, previous to the attack, their food has been varied. Appetite and hunger have gone hand in hand, and what they have been accustomed to eat has been guided greatly by an acquired liking for this or for that form of food. Milk as a diet has been discarded long ago, and by a great many is either not taken at all or only as an occasional glassful at meal time

In such cases are we justified in reducing the bill of fare, and that at once, to an exclusive milk diet? Is milk the food *par excellence* in these cases to the exclusion of all others? To-day it is the generally accepted idea that it is. Such men as Prof. Osler, and others of light and leading in medicine advocate it, and our respect for authority is so great that if our thought has not been specially given to any matter, we naturally accept and follow their advice; for we know that in general we cannot do better.

Milk, the exponents of the milk diet say, is a perfect food, it is a complete food, so easily absorbed, so readily digested, not apt to cause gastro-intestinal disturbances: and is, therefore, the food to give above all others If I could concur with these statements there would be no one more ready to say "amen" to the dieting of all cases of typhoid with milk, and milk only, than I would be myself: but these statements I challenge.

Dr. Wm. Thompson (I refer you to the Text-book of Medical Sciences), in an article on milk, mentions that milk contains all of the elements necessary for maintaining life, but—notice that *but*—that these elements, more particularly the nitrogenous elements, and the carbohydrates, are not in proportions such as are necessary for adult life. Milk is rich in nitrogenous material, and not so rich in carbohydrates.

and, he continues, the system in health requires for daily consumption 18.3 grammes of nitrogenous material, and 3.28 grammes carbohydrates.

To get the sufficient amount of carbohydrates such a quantity of milk has to be taken that the nitrogenous elements are in excess, and Dr. Thompson goes on to say that, because of this inequality, if a healthy person be put on an exclusive milk diet there are apt to develop in a short time a great nausea, a great loathing for the milk, and very often gastro-intestinal disturbances.

Exponents of the present milk dietary may argue that in typhoid fevers there is a greater demand for nitrogenous material, and that, therefore, this inequality in proportion is greatly overcome, and, because of this, milk is not so apt to disagree with the stomach. This argument is good, and I would agree with it to the extent that I believe the fever, by increasing metabolism, has greatly modified the demands of the system, and made the stomach and system generally more tolerant of milk; but, after all, is it not merely a toleration? In the great majority of cases, on inquiry, do we not find the same nausea and the same loathing for milk that we are told a healthy person will develop if put on an exclusive milk diet; is there not a great desire for something else? I have found it so with the majority of those I have questioned.

We are told that more nitrogenous material is necessary in the fevered state. That is granted. But another question is: although needed, can the weak and diseased digestive and absorbent systems attend to the absorption of the same? That I very greatly doubt. Do not forget that from 86 to 88 per cent. of cow's milk consists of water, and in this connection we also know that the fevered system requires this water, and therefore this portion of the milk is apt to be readily absorbed. But what about the nitrogenous material? Is it so readily taken up? Theoretically, we are apt to think it is; practically, the typhoid system shows no affirmative sign. We daily see the patient becoming weaker and more emaciated for the first two or three weeks of the diet. To a certain extent it reminds me of the old adage, "one man may lead a horse to water, but ten men cannot make him drink." Of course, the progressive emaciation is due to the direct action of the typhoid virus; what I fail to see is that it is arrested or lessened by the exclusive milk diet; on the contrary, I am inclined to think that it is accelerated,

Confine the diet of a healthy, strong man to milk entirely, and what will be the inevitable result? Life may be maintained for some time, but with this infants' food the *strength* of the adult is bound to be reduced, and, reasoning from this, I cannot but believe that we, with

our exclusive milk diet to the patient, in reality help to bring about and keep up that typhoid condition of weakness which we see in all our typhoid cases.

Now let us look at another feature in this dieting, and see if we can agree with the milk diet as presented on this point. Among the first symptoms of typhoid fever are nausea, vomiting and loss of appetite. It would seem as if the system, knowing that a rest was needed for the whole of the alimentary tract, actually refused to digest what was already in the stomach, and, in the most emphatic way possible, showed to us that it demanded this rest.

In all acute inflammations rest to the part diseased is laid down as one of the cardinal requisites to a speedy cure. Notice how this rule is followed out in surgery and in medicine. Let any one of us seriously injure an arm or have an acute inflammation of any sort on the arm. Do we not immediately give that member rest? We do so for two reasons. The first and most imperative reason is because of the pain produced by movement; and another reason, but one not so much thought of at the time, is because we cannot use that arm as formerly. There is a loss of function of the inflamed member. Because of these two reasons we instinctively, of our own accord, give the diseased arm rest, absolute rest. The surgeon when called in, by his bandaging, helps us to keep it at rest, and thus assists and follows out nature's promptings.

One more example: In pleurisy we have another acute inflammation, with intense pain. Here we cannot give absolute rest to the inflamed surface, as we cannot cease to breathe. The interchange of gases carried on in the lungs is imperative to life and cannot be stopped, even for a few minutes, without dire results. But note the condition we find in pleurisy. As far as possible the sufferer keeps the abdominal muscles tense and breathes very superficially with the upper lobe, keeping the lower portion of the lung, where the pleuritic pain is most severe, as quiet as possible. By doing this he gives himself least pain. This is done instinctively, really without thought on our part. The physician recopying nature's plan of treatment assists her by strapping the side, so that expansion of that part cannot occur. It gets the rest needed.

Now, to return to typhoid. The seat of the trouble is in the alimentary tract. This is seriously diseased and has demanded rest—rest to both digestive and absorbent systems. It is no longer able to digest as formerly. It has actually refused to digest what was at the time in the stomach, and enforces this point by taking away the patient's appetite. Surely these indications tell us plainly enough

what course nature wants for the time being to pursue. Would we not be doing wisely in listening to her and helping her, as we do in both injuries, and other acute diseases such as I just referred to?

We must not forget that the patient's system has resources stored away to be used on just such occasions, and when the system tells us that she intends to draw on this reserve, because of the weak, diseased digestive tract, why not let her do so until the stomach rights itself sufficiently to demand food? That to me would seem the rational plan, and the plan in keeping with our other treatments, but for some reason, which the exponents of the milk diet will possibly explain, it is not the course pursued in the treatment of typhoid. In fact the reverse is the course pursued, and the unfortunate stomach is asked to attend to a dose of milk every two hours.

Just at this moment we might find it instructive to look into the condition of the stomach and see how far it is able to assimilate this milk. Dr. Beaumont, who was able to examine daily the stomach of a young man who had a fistulous opening into that organ, resulting from a gunshot wound, found that "in febrile diseases very little or no gastric juice is secreted, so that food taken at that time is not digested." Sir William Roberts, in his work on Digestion and Diet, mentions that "in the seriously sick there is neither pepsin nor acid in the stomach to curdle milk." This is the condition of the stomach into which the milk is put.

Milk in the healthy stomach, with normal secretions, curdles quickly, the casein forming into solid masses, which in turn should be broken up by the gastric juice Without this gastric juice and acid, how is the milk to be digested? If not digested, of what benefit is it? What about nitrogenous elements which we are told are assimilated?

Or to look at the matter from another point of view. Milk normally in the healthy stomach takes three hours for complete digestion I confess this was a poser to me when I read it. Milk normally takes three hours for complete digestion, and here to this diseased digestive tract we have it ordered every two hours! Surely we do not believe that the weakened system, and particularly the diseased gastro-intestinal tract, possesses increased digestive properties for the time being? This would be a "reductio ad absurdum."

Then, if we admit that the gastro-intestinal tract is particularly weak, as is really the case, are we wise in ordering milk every two hours? Before the one dose is disposed of the next is on top of it. I leave this thought with you, only wishing to impress on you the point that the stomach has demanded rest, that from practical examinations of a stomach in a febrile state, this rest is shown to be absolutely

necessary, the stomach not giving forth gastric juice and pepsin necessary to digest milk. That instead of this rest, milk is presented, a dose every two hours, while even in a normal condition the stomach requires three hours for its complete digestion. Remember these points and draw your own conclusions regarding the wisdom of this dieting.

To continue regarding the digestion of milk. We find that either in the stomach or duodenum (Sir William Roberts says in the duodenum because of pancreatic juice) it—the milk—is broken up into a whey and a casein, which latter is practically a tough cheese. This, in the weakened condition of the patient, is very difficult of digestion, and very, very little of the proteid matter is changed into peptone. These hard masses of casein mat together and pass down the intestine as one hard mass, constipating the patient, and requiring enemata for their removal in the great majority of cases; this, too, in spite of the lime water and soda which has been given to reduce the size of these masses of casein.

In connection with the amount of hard excrementitious matter given off by the milk diet, I should like to quote Rubner. He found that even in health an exclusive milk diet gave a greater bulk of fæces than an exclusive diet of roast beef or eggs.

Let me emphasize this point. All this casein is formed either in the stomach or in the upper part of the small intestines, so that as a bulky mass it has to pass over the particular site of the lesions. This surely should score a point in favor of other diet. Remember the irritable condition of the ileum, with its inflamed, projecting Peyer's patches, which may in places be ulcerating or sloughing. Remember this condition, and we cannot but admit that everything tending to bulkiness of excreta should be, as far as possible, replaced by a diet giving less bulky, and, therefore, less irritating fæces.

Another feature about milk diet, and one that should give us no uncertain index as to the condition of the stomach, is the condition of the tongue and teeth. Look at the coated tongue. Notice the sordes about the teeth, the very foul breath. Those conditions, bad at any time, are always most pronounced when the febrile state is highest, and are so offensive that the mouth has to be kept washed with an antiseptic wash. These features clearly indicate the stomach's condition. Yet, although we cleanse the outside of the cup, metaphorically, by cleansing the mouth, we take no steps towards remedying the condition of which this is merely a symptom. We merely advise another dose of the cause in two hours.

Occasionally, at the hospitals, there are typhoid patients with

whom milk disagrees at the commencement of their treatment to such an extent that the stomach rejects it. In these cases it is the rule to change the diet for a time at least. Here the physician recognizes the wisdom of attending to the dictates of nature, and some more suitable food is given until milk will remain on the stomach, and then the same milk diet is prescribed to him as to other typhoid patients. Here I think we may raise a question. Are we wise in following the dictates of nature in this particular case? Milk is given, the stomach rejects it, and the diet is promptly changed. I think we will all agree in the wisdom of making the change. But let us carry the course of reasoning a little further. Here are two patients. The stomach of one rejects the milk and his diet is changed. The other one is nauseated, but the milk remains on the stomach; he gets the milk diet. The difference in the nausea between these two cases has been one of degree, yet notice the difference in the latitude allowed to diet. Might we not rightly reason that if it is beneficial in the one case to give what best suited the stomach, that the same rule would be equally beneficial in the other case, where there was a loathing of the milk, although the nausea was not quite strong enough to cause a rejection? Look at this from an unbiased standpoint, and does it not occur to you that the dietary line is pretty tightly drawn in the case of the nauseated patient?

Another side to this question of following nature's lead presents itself, when, during some stage of the disease, the sufferer craves some particular food. I here refer to a real hunger, and not to a morbid, changeable fancy such as might be expressed when the cerebral functions are disturbed.

If we recognize and appreciate the wisdom of nature on the one hand in objecting to a diet that does not agree with the stomach, why should we on the other hand think she has grieviously erred in her desires. It does seem to me that just here a little more latitude might be allowed. It is merely following up the course of reasoning I commenced with when speaking of the stomach demanding rest. The weakened stomach is now able to distinguish between what is acceptable and what is not.

To a great many this may seem rank heresy. Yet, remember in all acute diseases, the nearer we get to nature's methods, and the more we help her in her ways instead of running counter to them, the more nearly are we getting to correct treatment. Let me illustrate my meaning. We do not have to go back so very, very far before coming to the days when physicians, conscientiously believing they were doing the correct thing, would refuse a fevered patient a drink of cold

water. They could have water with the chill off—that insipid, unrefreshing drink that we none of us care for, and for which the fevered system evinced no craving—but no cold water. That was considered dangerous. Now, in happier days, we see the folly of those times, and gladly give what nature advises, allowing the patient as much cold water as he wishes, recognizing its beneficial therapeutic effects. In view of this fact, that the leaders of the profession, not so many years ago, committed a grievious error in ignoring the demands of nature with reference to giving cold water as a drink, is it not possible that the leaders of the profession to-day are making a similar error in ignoring the demands of nature with respect to giving of other foods than milk. Fifty years ago physicians were not infallible. Are we so to-day?

I leave this thought with you, merely quoting a health maxim bearing on this point: "It is a universal rule in health, and with a very few exceptions in disease, that that is best to be eaten which the appetite craves or the taste relishes."

To this my opponents may bring in the objection so much raised that *any change* of diet is liable to cause a relapse, and they will on this point quote many so-called instances. They may tell you that, following some slight change in diet, the temperature has risen, and the patient has once more to undergo another attack of the disease, and all due to some change in diet. If any such statement is made I want it proved.

In these cases I admit there is a coincidence in point of time between the relapse and the change of diet, but that the one has been the result of the other is by no means certain. The real cause of the relapse is not understood. We know from the rise in temperature that the reinfection has occurred, but there our knowledge ends. This being so, are we justified in coming to any such hasty conclusion as that because there is an apparent connection between the time of some change in diet and a rise in temperature, that necessarily the one is the result of the other? How does the change in diet cause a reinfection by the typhoid bacillus? In this connection how is the advocate of the milk diet to account for the relapses occurring where the patients have been fed strictly on milk and have had no change of diet? For such a case there is no haven of refuge. As a general thing we do not hear so much of these cases. They are not heralded abroad with the same vigor as are the unfortunate cases that are said to be due to a change in diet, yet I will shortly quote some figures—the only ones I could find in medical journals for 1897—and these give a much less percentage of relapses following a more liberal

diet than those I have already quoted, where the restricted milk diet was enforced.

Just now, however, while at this point of "change of diet," which our restricted diet friends tell us is the cause of so many relapses, I would like to draw their attention to what might be considered an error in their treatment, if they in reality believe the relapse to be due to a change in diet.

When the patient primarily came under the physician's observation he had a temperature that was higher than normal, the disease was established, yet what was the first thing advised? A sweeping change, no ordinary change, but a sweeping change in diet; everything he has been accustomed to is denied him, and he is ordered nothing but milk. I can nowhere find any remarks bearing on this point, but if a change in the diet, generally comparatively slight, can cause a relapse, sometimes even when convalescence is established, (in eight days after temperature was normal, in one case at the Royal Victoria,) I do not see how a change, particularly such a radical one, can act so very differently in the earlier or initiatory stage of the disease; only at this stage we would not look for nor speak of a relapse, but we might reasonably expect to find an increase in the severity of the symptoms. Is not that just what we do find?

Another point in regard to relapses is this: The patient has been reduced from a strength-giving diet to an infantile one; surely this weakening diet should make the system more liable to suffer from any change in diet later on.

A third point is that these relapses in hospital practice very frequently follow when the patient has eaten some tit bit that has been smuggled in by his or her friends. They (the friends) out of sympathy have brought something, and the patient has eaten this something; following this the temperature rises, and the cry goes forth that the change in the diet was the cause of it. Admitting for argument that it was the cause, have we not by our own weakening dietetic treatment predisposed to it?

In a case such as this too distinct a line cannot be drawn between a craving and a friend's tit bit. After some weeks on a milk diet one would have to be very careful what change was made, because of the weakened condition due to the typhoid and milk combined.

I have already mentioned that no cause is assigned to those relapses that occur where milk only has been given. The reinfection has occurred, but how? Might we not ask ourselves if the milk itself was not the cause. We know that the milk of the cow is susceptible to any change in the diet of the cow, and that many of these diets

impart to the milk some of their peculiarities. Is it not quite within the range of probability that the effect of some of these peculiarities on the bowels may be deleterious, and that the resisting power of the ileum, already much weakened by the fever and our milk diet, be thereby lessened? To this couple the fact that we have no better culture medium than milk for the development of typhoid germs, and we may get an insight into how a reinfection is made possible, where the unfortunate "change of diet" cry cannot relieve us from further investigation.

Regarding perforations, I will say nothing further than to remark that perforations are now not considered as being due to the change of diet. We are told that a relapse may occur but not a perforation. These perforations are usually found at the bottom of small, deep ulcers, and are believed to be due to ulcerative and necrotic changes that occur gradually.

Dr. Peabody, of New York, writing on diet in typhoid, tells his experience. I quote in full: "We are accustomed to have too great a dread of doing harm at the site of lesion in the ileum in typhoid fever by giving solid food. If I am correct in my opinion as to the inference to be drawn from hunger in a fever patient there is even less likelihood of causing damage to an ulcerated ileum by giving divided egg or beef or chop to such a patient than by giving him milk, and my experience seems to justify the inference." . . . . "It has been my practice for years to allow albuminous foods of these descriptions to such patients, even before the fever leaves him, under these conditions. I have at present under treatment several patients with typhoid fever whose temperatures reach 101°, 102°, 103° F. daily, who are hungry, and who are receiving such solid food once a day. So far as I am aware I do not have a larger percentage of relapses or hemorrhages or other complications or accidents in my practice than I did before I adopted this plan, or than my colleagues do who have not yet adopted it." (*Medical Record*, Nov. 26, '92.) These words are so plain that I refrain from commenting on them.

Dr. Barrs, an advocate of a more generous diet in typhoid, quotes thirty-one consecutive cases that he treated much as does Dr. Peabody Of those thirty-one cases all recovered: two had relapses. Does this not compare well with the statistics of our own hospitals under the milk regime?

Dr. West, in an article in the *Canada Lancet* criticising Dr. Barr's remarks, believes the percentage of relapses is too high, but gives no comparative statistics. I have furnished them. Had Dr. West had them he would have found them a "boomerang." Dr. West believes

strongly in the milk diet. In the commencement of his article he says: "In the febrile stage it is important, first of all, to find out a diet which suits the patient. Milk is the simplest diet, and fortunately it suits most people, but not all. If milk cannot be taken the diet must be modified, and this or that form tried until one is found which agrees with the patient. As soon as the suitable diet is found it should be continued and not changed without good reason."

This is a good common sense argument, and in the main I take it as such. The only objection I offer to it is that he does not in all cases allow the system to dictate, instead of first of all trying milk and then, if that does not agree, casting about until at last he hits on some diet that the system says is suitable, by not rejecting it. I also object to his assumption that milk agrees with all persons except those with whose stomach it disagrees sufficiently to cause rejection.

A little further on in the same paper he practically agrees with this, for he writes: "If I come to a patient and find that patient upon a diet that suits him, although it might be one which I would not myself have originally selected, I should not change it if the patient were doing well."

Considering that Dr. West is a milk feeder, and that his article was in criticism of a physician prescribing a more liberal diet, this last statement is remarkable. I take it that when he wrote that sentiment he had more particular reference to injuring from a change of the diet, as in another paragraph, in writing on the change of diet, he says: "There is no evidence that the food itself produces perforation or any other morbid process except the relapse, and then all the accidents may occur which are met with in the original disease."

One other remark regarding the milk diet in typhoid and I have finished. In prescribing an all-milk diet are we not subjecting the patient to the chance of future disease from certain germs that may be in the cow's milk, notably tuberculosis? In typhoid the great safeguard against the infection of the alimentary tract by tubercle bacilli is removed The acid secretion of the stomach is either nil or very weak, not sufficiently strong to digest properly, so that we may confidently expect, if there are any tubercle bacilli in the milk, they will pass unharmed into the intestines. But in case the acidity may be too strong we overcome this as far as possible by adding an alkali to the milk. Let the bacilli once get into the intestines, would it not be comparatively easy for them to enter the system through the diseased and weakened mucous membrane, and, having once gained a foothold, may they not, later on in life, be the cause of that dread disease, tuberculosis?

You say this is a remote possibility. I grant it; but, in the following up of my subject, the remote possibility of causing trouble by the milk diet as prescribed nowadays should not be overlooked. And, after all, the possibility may not be so remote as we are apt to imagine.

A closing remark: The articles one reads in medical journals today are nearly all in one strain. It is milk diet, exclusive milk diet, nearly all along the line; yet, with all this writing, we get no comparative statistics.

Dr. West, in closing his article, says: "I do not think this question should be treated as an open one, as if it had not been seriously considered hitherto, for the current opinion is really the outcome of a multitude of observations conducted without bias for a number of years and all the more trustworthy because no attempt is made to prove it by figures." I do not like the sentiment. It is too much like muzzling honest inquiry and research. Remember that as pro-professional men we must, sometimes at least, think for ourselves.

Here I have have given you some results of a more liberal diet in typhoid and some objections to the all-milk diet, and some reasons why a more liberal diet might be adopted. Remember that we are reaching towards the acme of perfection in the treatment of any case when, in obtaining satisfactory results, we have employed methods that have been most acceptable to the patient.

I believe that the time is coming when all typhoid patients will be more generously dieted. Let the day be hastened.

Since writing this article I find that the concensus of opinion of the physicians at both the Montreal General and the Royal Victoria Hospitals is that the change of diet made with care has nothing to do with the relapse. The cause at present is not known, but it is not believed to be due to the change of diet. I trust that before long this view will be generally accepted as correct. That it is not universally so accepted as yet is proved by Dr. West's statement to an interested public that: "There is no evidence that the food itself induces perforation or any other morbid process except the relapse," etc., etc. The idea of the relapse being caused by the change of diet is now considered erroneous. Now if this be so, that the change in diet does not cause the relapse and does not induce perforation nor any other morbid process, what under the sun is it to cause that will be baneful?

REMARKS UPON A NEW DIFFERENTIAL STAIN FOR FAT, SUDAN III.

BY

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During the past few weeks I have been making trial of Sudan III, a new staining agent which has the power of staining fatty tissues without affecting other portions of the preparation.

This stain is an amorphous powder, having the formula $C_{22}H_{16}N_4O$, a disazo-body, of a brick-red colour, which is soluble in alcohol, xylol, ether, and the various aromatic oils, while it is insoluble in water and glycerin. Daddi, of Turin, in 1896, found when he fed animals upon oil impregnated with Sudan III., that after the animals were killed the adipose tissue alone took up the stain and the method of absorption could even be traced. Hermann Rieder in the *Deutsches Archiv f. klinische Medicin*, (Dec.. 1897,) applied the new agent to microscopic sections with success. He was able to determine that the larger fat particles stained a scarlet, while the smaller ones where more of a golden colour, the stain being definitely selective. He states that the method has great value in the determination of fatty infiltration or degeneration in parenchymatous organs, for the examination of milk or colostrum, sputum, fæces, in lipæmia, lipuria, or chyluria, and for fatty casts. Rieder advises that the tissues should be hardened in Müller's fluid and clarified and mounted in glycerin. Absolute alcohol should not be used. After hardening, the tissues are cut upon the freezer and then stained in a solution of Sudan III. made as follows : Ninety-six per cent. alcohol is saturated with the dye and filtered. To this is added two-thirds of its bulk of fifty per cent. alcohol, and the solution again filtered. Sections are left in this for a few minutes, washed in seventy per cent. alcohol, the excess removed with filter paper and are then examined in glycerin. A preliminary stain of hæmatoxylin may also be employed.

From a short experience of this stain I have been able to corroborate most of Rieder's statements, and with a small modification of his method have obtained very good results. The method I employ is to harden small portions of suspected tissue in 10 per cent. formalin. These then can be cut upon the freezer in an hour or two, and very

good thin sections are the result. The sections are placed in hæmatoxylin till stained and then allowed to stand in tap-water. They are then transferred to the solution of Sudan III for three minutes, washed in weak alcohol (60—70 per cent.) and mounted in Farrant's fluid. This produces very clear and permanent preparations. Zenker's fluid or sublimate may also be used to fix the tissues. So far as I have observed, the stain is absolutely selective for fat. Bacteria are not stained by it, but it might be employed to determine fatty particles in their bodies. Myelin is faintly tinged by it, but by no means so markedly as fat.

To stain fatty casts the urine should be centrifugalised, the sediment should then be mixed with 3 to 4 c.cm. of distilled water and an equal bulk of the Sudan III. solution added. This is then diluted with an equal bulk of absolute alcohol and again centrifugalised, and the sediment examined under a low power. The fatty particles are stained and look like red granules on the cast.

The method may also be applied to blood work. It is very important that the coverslip should be absolutely free from grease. The film is fixed for 15 minutes in formalin vapour, and the stain used as before. A subsequent immersion in hæmatoxylin for a few moments is valuable to bring out the nuclei of the leucocytes. The alpha-granulations are not stained, thus affording an additional proof that these bodies are not fat. I have also failed to stain the neutrophile granulations by this method.

Altogether I believe that in Sudan III. we have a valuable addition to our laboratory equipment, for it possesses distinct advantages over osmic acid. For rapid work osmic acid is often employed, but it results in a dirty black smeary specimen, which is very unsatisfactory, and even when Fleming's mixture is used, unless the portions of tissue are very small they are very unequally stained, and in laboratories the solution is rarely in good working order. Osmic acid also tinges other bodies besides fat. With Sudan III. the preparations are clean, clear and distinct, and the finer structure can be readily studied, very pretty pictures being produced. The tint is also readily distinguished from brown atrophy or other forms of pigmentation. Care should be observed that after staining all excess of stain is washed away, and also not to mistake in the finished tissues fat droplets which have been misplaced in the process of cutting for a local fat invasion. For gross work at post-mortems only moderate results can be expected, and in my hands it has has not proved satisfactory.

POST-MORTEM EXAMINATION IN TWO CASES OF CHOREA CHOREA INSANIENS AND CHOREA MAJOR IN INSANITY.

BY

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Cases of chorea are rarely fatal and when so, death is from exhaustion, by accident traumatic or pathological, or when complicated with other diseases or accompanied by mental symptoms of a maniacal character. Cases being so infrequent, I wish to place on record these two cases of chorea major; one of which would come under Osler's classification of chorea insaniens, the other, a case of chorea major occuring in an insane patient.

Case I.—For the clinical notes of this case I am indebted to Dr. Croskery, late House Physician to the General Hospital, Kingston.

Alf. R., æt. 17, apprentice plumber.

Family history.—Patient comes of a "neurotic" family. (Epilepsy) Otherwise no family history of disease.

Personal History.—Patient has had no previous illness so far as can be learned from parents. On April 9th, 1897, on returning from work he developed a peculiar train of neurotic symptoms. irritability of temper, crying alternating with loud fits of laughter, and other hysterical manifestations. A physician was called who placed him on valerian and bromides. No movements were at this time detected. Two days later, however, decided muscular movements set in, the other symptoms persisting, but in milder form. The movements grew decidedly worse till on the 16th he was ordered into the hospital, but was not removed till the following day. He was admitted into the hospital at 4 p.m. on the 17th. When admitted muscular movements were incessant over entire body, least marked in face. He was incapable of any progression and could neither sit nor lie. His countenance was dull and stupid, and mouth wide open. Respiration 24. Pulse 88. He was given, with difficulty, pot. bromide 20 grs., choral 15 grs., by mouth, without the slightest effect. At 8.30 p.m., he seemed to have lost all knowledge of his surroundings. Shortly after he sprang from bed to floor and then jumped high into air, falling heavily on floor. Morphia $\frac{1}{4}$ grain was given hypodermically without effect; the movements continuing incessantly. At 9.15 he was placed under chloroform and then he slept till 11 p.m., occasional movements occurring. When he awoke movements were

exaggerated and patient was perfectly crazed, requiring several persons to prevent him from injuring himself; ¼ grain morphia was again given, and was followed by sleep till 4 a.m., quite peaceably. Then his breathing became loud and deep and mouth filled with mucus. He roused up occasionally and when he did, exaggerated movements came on. Toward 6 a.m., respiration became very slow, only three to five per minute. Artificial respiration was resorted to. The pupils were contracted, the right one particularly. Repeated hypodermics of strychnia and brandy were given and breathing became better. Stupor persisted till 12 m., when he revived under further stimulation, the movements again commencing. He died at 1 p.m., 21 hours after admission.

The autopsy was not made till April 26th, eight days after death, as permission was at first refused by parents. The body was kept in the meantime in a vault at a low temperature and was in an excellent state of preservation, better than I often find in bodies 30 hours dead in summer time.

External Examination. Early surface signs of putrefaction evident in greenish discoloration of the iliac regions and back and in the outlined surface veins. A few small bruises over arms and legs. Pupils contracted and equal.

Head. A small blood extravasation over occiput due to fall on floor. Skull cap and dura mater normal. Longitudinal sinus full of fluid blood. Veins of pia mater engorged. The arteries of the base of brain were carefully dissected out and were found normal except the right anterior cerebral, in which there was found a recent embolus, just anterior to the anterior communicating artery. The artery beyond contained recent clot.

The brain weighed 46 ozs. Cerebral substance quite soft. The ventricles were slightly dilated. No lesions found in any part of brain substance. No change could be detected in parts supplied by right anterior cerebral, an evidence of the recent nature of the embolism.

Thorax.—Pleuræ contained no fluid nor adhesions.

Lungs.—Show commencing gaseous putrefaction, but no pathological features.

Trachea and Bronchi.—Show putrefactive changes.

Pericardium.—Normal.

Heart.—Weighed 8½ ozs. Both sides of heart full of blood. Walls healthy.

Right auricle and ventricle and their valves normal.

Left auricle and ventricle present no particular features. Aortic valve competent.

On both cusps of mitral valve there are present on auricular aspects, just behind free edge, recent pin head to mustard seed sized vegetations. These were most marked on the aortic cusp where at one spot there was a mass of these forming a granular heap the size of a split pea. Microscopically no bacteria other than those found in blood (putrefactive bacilli) were detected in these vegetations.

Aorta and pulmonary arteries were normal.

Abdomen.—Putrefaction had advanced to a considerable extent in the abdominal organs. No pathological feature detected in any of the abdominal organs.

No cultures were made as putrefactive bacteria would mask any result of value.

Summary.—Acute simple endocarditis. Embolism of the right anterior cerebral artery.

It is quite possible that in this case there were also emboli in the minuter branches of the cerebral vessels. Microscopic sections of the basal ganglia were a failure owing to failure of hardening and fixing re-agents to act, due to age and consistence of brain.

Case II.—This case was one occurring in Rockwood Asylum for Insane, which I am permitted by the courtesy of its medical officers to publish.

Mrs. M. L. T., æt. 50. Has five children. Was admitted to Rockwood Asylum, Sept. 2nd, 1896, for "dementia with occasional suicidal and homicidal propensities."

Her family history is practically nil, except that she has no insane nor choreic relations. On admission the woman was in fair health. Choreic movements were present chiefly in arms and face. Her history dates back 10 years and has been one of gradually increasing mental weakness, but no history as to period of onset of the muscular movements can be obtained.

On the dates given I find the following notes of her case: Oct. 6th 1896.—Patient walks with a shuffling gait, feet widely separated and toes turning in, and requires help. Both shoulders are jerked forward and upward, and there are marked twitchings of the fingers. The facial muscles are continually in motion. Speech is indistinct and jerky. Dizziness is constantly complained of. She sleeps well and spasms subside during sleep. The eyes are normal. The appetite is inordinate as a rule. Heart and lungs *nil*. Feb 2nd, 1897.—Walking is becoming very difficult, even when assisted. The patient is now a distressing feature from the constant movements, and has now to be fed.

May 1st.—The patient has been rapidly failing of late. There is

now not the slightest control over her movements and if not held she tumbles about, injuring herself. Ulcerated sores have appeared on scalp, sacrum and along spine. The patient has become very noisy.

She gradually weakened and died on May 13th. The autopsy was made by myself, 30 hours after death (May 14th).

The body was very much emaciated. There were numerous ulcers on dorsum of body, one large one over the sacrum, several small ones about an inch in diameter were present over dorsal spine and one over occiput an inch in diameter. This latter one was surrounded by an area of purulent infiltration of the scalp tissues. The others showed no marked inflammatory signs nor yet any evidences of healing. The pupils were partially dilated and equal.

Skull Cap.—Normal. Longitudinal sinus empty. On inner surface of dura mater, on both sides and extending to the base, was a fibrous membrane about $\frac{1}{16}$ inch in thickness, containing a small amount of serous fluid in its interstices, and presenting no signs of recent or old hæmorrhage. This fibrous membrane was separable with difficulty from the dura, but was readily separable from the pia-arachnoid and did not dip down at any part between the convolutions. I believe this fibrous membrane to have been the results of a hæmorrhagic pachymeningitis despite the absence of any traces of hæmorrhage. The membrane itself was very white and possessed a scanty blood supply

The brain weighed 42 ozs. Substance softer than usually met with. The cortex cerebri somewhat dark in color. Ventricles of normal size and filled with usual fluid. Nothing of import in other portions of brain.

Thorax.—Pericardium contained 2 drachms serous fluid.

Heart.—7$\frac{1}{2}$ ozs. Muscle pale. Connective tissue appreciably increased in heart wall.

Right ventricular wall hypertrophied slightly, the wall measuring $\frac{1}{2}$ inch, and chamber slightly dilated. Tricuspid and pulmonary valves competent.

Left auricle about $\frac{1}{3}$ larger than right.

One cusp of mitral valve was thickened by fibrous tissue formation and the edge slightly retracted, but proved competent by water test. Evidently it was not quite so, as witness the dilatation of the left auricle and the slight hypertrophy of the right side of the heart.

The aorta showed numerous areas of primary fatty degeneration and an occasional early atheromatous patch.

Œsophagus.—Normal.

Trachea—Normal but contained considerable mucus.

Pleura.—No fluid nor adhesions.

Lungs.—34 ozs. together, quite normal in all respects.

Abdomen.—Peritoneal cavity contains no fluid. Intestines moderately distended. Great omentum free from fat.

Small Intestine.—Contains a little bile stained fluid contents. Mucus membrane healthy.

Great Intestine —Shows a few scattered scybala.

Stomach.—Normal.

Liver.—30 ozs. Normal. Gall bladder partially filled and the ducts patent.

Pancreas and Suprarenals.—Unchanged.

Kidneys.—Right 3½ ozs. Capsule slightly adherent. Cortex diminished in size and pale. Medulla dark red. No cysts in cortex. Microscopically there is found a slight increase of the interstitial connective tissue, most marked between and about the convoluted tubules.

Left Kidney.—3¼ ounces, same condition as right.

Bladder.—Empty.

Uterus, Tubes and Ovaries.—Are small and atrophied.

Summary.—Pachymeningitis interna fibrosa, (likely hæmorrhagic in origin). A thickened slightly retracted mitral valve cusp. Slight interstitial nephritis.

Case I, is of particular interest in the finding of the plugged anterior cerebral vessel, together with the acute endocarditis. It is to be regretted that permission to hold the autopsy was not sooner obtained so that a bacteriological investigation could have been made. It is a matter of question whether the death in this case was due to the embolism, a pathological accident. I am more ready to ascribe it to the cumulative action on the nerve centres of the toxic agent (whatsoever it may be) of the disease.

Clinical Reports.

SAW CUT THROUGH SKULL.

BY

D. D. MacTaggart, M.D.,

Medical Superintendent Montreal General Hospital.

E. E., aged 26, French-Canadian speaking both languages, was admitted to Dr. Kirkpatrick's ward in the General Hospital, on the 18th of October, 1897.

The patient was employed in a saw mill, and while clearing away the sawdust beneath the circular saw his head came in contact with it and a severe wound was inflicted. He was taken to hospital and on admission was attended by Dr. Wainwright. On examination the patient was found to be in good condition, sat up in bed and did not seem to suffer from the injury. Nothing abnormal was observed about the face or body with the exception of the left eye, which the patient could not open as wide as the right. Patient was taken to the operating room and the cut on head examined under ether. It was found to be in the left side of the head, three-quarters of an inch from the median line at the anterior extremity, and three and three-quarter inches from the same line at the posterior extremity of the cut. The anterior extremity of the wound was three-quarters of an inch above the supra-orbital ridge and the cut extended backwards and outwards six and one-half inches The edges of the wound were gaping, showing the bone beneath, which had been cut through. The edges of the cut bone were cracked in places and many splinters found in the wound. A probe was passed between the edges of the bone, which were one-quarter of an inch apart, and it penetrated the wound (from its own weight) two inches at the centre and one and one-half inches at either extremity. There was free bleeding from the vessels of the scalp which were ligatured with catgut. The wound was irrigated with hydrargyrum bichloride solution (1-5000) and then with saline solution. The space between the edges of the bone was plugged with iodoform gauze, the ends of the gauze projecting at either end of the wound. The edges of the scalp wound were then brought together with silkworm gut sutures, dressings applied and patient sent to ward.

The following morning, Oct. 19th, the patient had no temperature and pulse 86. The right side of the face was paralyzed, the mouth

being drawn to the left side. The patient was not able to purse up his lips. Grasp of right hand was considerably less than that of left. Knee-jerks not increased. Sensation normal. Retention of urine.

Oct. 20th.—Patient showed evidence of motor aphasia. He was unable to give the name of an object but knew if it was called by its correct name. Is unable to write, although able to do so before the accident. Passed urine naturally.

Oct. 21st.—No change in condition of patient.

Oct. 22nd.—Slight rise in temperature, wound dressed. No change in the nervous symptoms.

Oct. 23rd.—Sensation was less acute over dorsum of right hand. Hand grasp slightly weaker than on the 19th. Patient would not speak unless spoken to, and then usually confined his answers to "yes" and "no."

Oct. 28th.—Sensation in hand appears normal. Facial paralysis slightly less marked. Hand grasp rather stronger.

Nov. 1st—Laryngoscopic examination made by Dr. Birket and nothing abnormal found. Firm union of scalp wound except at posterior end, where gauze had been kept inserted.

Nov. 4th.—Patient can now remember the names of articles (if told him) for a short time. Previous to this names were forgotten immediately after being told.

Nov. 5th.—Patient was able to give the name (in French) of a key and a knife, when shown him. Facial paralysis less marked.

Nov. 9th.—Patient had no difficulty in giving the names (in French) of articles shown him. Facial paralysis becoming less marked.

Nov. 14th.—Patient can now name (in French) any article shown him, and also fairly well in English. Wound almost completely healed.

Nov. 22nd.—Patient speaks perfectly in French and is rapidly recovering his English. Discharged. Cured.

"OBITER SCRIPTA" III.

(Casual notes from the Medical Clinic of the Royal Victoria Hospital.)

BY

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Lecturer in Medicine, McGill University; Assistant Physician to the Royal Victoria Hospital.

SOME INTERESTING CASES AFFECTING THE RESPIRATORY SYSTEM.

CASE I.

Serous membrane tuberculosis, involving pleura and peritoneum, with chronic non-tuberculous muco-purulent bronchitis. Terminal disseminated miliary tuberculosis.

Cases of this kind are always of very great interest and belong really to the more uncommon manifestations of tuberculosis. The victim of this disease was a young man, who, had according to his account been in good health up to the onset of his present illness.

History.—He entered the hospital on the last day of December, 1897, complaining of dyspnœa, cough, general malaise and an acute pain in the left side which had come on *suddenly* two weeks previously. All these symptoms had followed exposure to cold and wet and in a very short time copious expectoration and prostration supervened. There was a family history of tuberculosis.

On admission, his temperature was 100½°, his pulse 106, and the respirations 28 per minute. He was markedly anæmic and the skin was moist. Apart from some irregularity in the pulse, the circulatory system showed no other evidence of disease.

His *chest* was of a tuberculous conformation being long with an acute angle at the ensiform cartilage, widened intercostal spaces and generally flattened. Examination showed a left sided pleural effusion of moderate degree, while on auscultation a few moist râles were heard over the left apex; the breathing on the right side was harsh. The sputum was copious, muco-purulent in character, and repeated examination *failed to give evidence of either tubercle bacilli or elastic tissue.* The *digestive system* showed in the main, a full and tense abdomen with no spontaneous pain, and palpation revealed neither tenderness, tumour, nor evidences of fluid. The spleen and liver were of normal size. The urine gave no evidence of disease.

Course.—Throughout the course of the malady the temperature assumed the daily intermittent type: there was copious sweating and rapid emaciation, while the cough and expectoration persisted.

Puncture of the pleural cavity revealed the presence of slight hæmorrhagic effusion, which on microscopical examination showed mainly a few blood cells and very few leucocytes which had undergone marked fatty degeneration. Death followed in less than three months after the onset of symptoms.

Autopsy.—The autopsy showed *bilateral hæmorrhagic pleurisy*, more advanced on the left side; tuberculosis of the peribronchial glands; a subacute more or less *dry chronic tuberculous peritonitis* which was obviously of longer standing than the pleural affection The *mesenteric glands* were caseous and the *ileum* presented one small shallow ulcer evidently tuberculous in nature; the pericardium was free from disease. In the *lungs* there was a chronic simple mucopurulent bronchitis, but no evidences of chronic tuberculosis. The only other condition of interest at the autopsy was the generalised miliary tuberculosis which evidently had induced the lethal termination.

Remarks.—The special features of interest in this case are as follows:—A chronic peritonitis which had been completely masked through the acute symptoms in the pleural cavity; the course of the malady throughout; the presence of a simple muco-purulent expectoration with many râles in one lung, naturally arousing the suspicion of chronic pulmonary tuberculosis, though oft repeated examination for bacilli had been quite negative.

Infection had occurred here no doubt from the alimentary tract as seen by the condition of the ileum and mesenteric glands, the peritoneum being thereby secondarily involved. The pleura was infected through the diaphragm as is usual in cases of this kind where the peritoneum is the primary seat of disease. In many cases recorded by Vierordt, the pleura was first involved and the peritoneum secondarily, and not infrequently the pericardium was likewise secondarily affected. That authority has never seen a primary pericardial tuberculosis under such conditions.

Clinically, cases of serous membrane tuberculosis vary considerably, being often extremely insidious in the onset, at other times, as in our present case, very acute. It is unusual to find other organs of the body affected. Frequently a pleurisy, evidently tuberculous in nature becomes "healed" and then within some months after the pleural symptoms have disappeared, the peritoneum shows evidence of acute inflammation, and later on again the pleura becomes involved for the second time. This feature in the course of the disease is often of aid in the diagnosis. It would appear that, from various observations made, fever is not a necessary accompaniment of the disease, though usually present. Dropsy is often a very marked symptom, and then

the differential diagnosis between cirrhosis of the liver and serous membrane tuberculosis becomes extremely difficult, more especially where fever is absent. The difficulties are all the more striking when the spleen is palpable, for in many cases of this form of tuberculosis, that organ is distinctly enlarged. Indeed, observations have shown that not uncommonly cirrhosis of the liver occurs with serous membrane tuberculosis, usually as a result of an old standing peritoneal involvement and capsular fibrosis. When the double affection occurs the actual condition must present great difficulties of diagnosis though doubtless *one* of the two processes would readily be assumed. The *treatment* is on the whole unsatisfactory, puncture of the pleural cavity being recommended for effusions in that region, and laparotomy for the peritoneal affection.

CASE II.

Latent pyo-pneumothorax.—Signs of extreme pleural effusion; normal temperature, pulse and respirations.

(The notes of this case are in part abstracted from the careful report of Dr. McCallum, one of the Resident Physicians).

A young woman who had cough, expectoration and dyspnœa, entered the medical clinic last April under Dr. James Stewart. She had been ill for nearly a year from influenza, so she stated, upon which a pneumonia had supervened. She was confined to her bed almost constantly from July to October with cough and frothy expectoration and slight intermittent attacks of dyspnœa. She never had had any hæmoptysis, nor were there sweatings, chills nor other evidences of pulmonary tuberculosis. The dyspnœa had at no time been very marked till two weeks before admission, which in this connection is a point of distinct interest, all the more so, inasmuch as she stated, that in December, of the past year she noticed splashing sounds in the chest on any rapid movement; this only persisted for a few weeks, and the onset had never been attended with any acute symptoms or pain. Ever since the splashing had been observed however, she had also noticed palpitation of the heart on the *right* side of the chest.

There could be no doubt from the history given that the patient had been suffering from a pneumothorax contracted in the course of a more or less chronic pulmonary disturbance. In the absence of further history however, it was impossible to state more definitely the actual course of the malady.

Her condition on admission was very briefly as follows:—

She was distinctly anæmic, preferred the left lateral decubitus, other positions causing marked dyspnœa and distress. The temperature was 98°, the pulse 96 and the respirations 20 per minute. Examination of the chest showed a condition typical of that induced by

extreme left pleural effusion ; viz., fulness of the left side and obliteration of the intercostal spaces; diminished expansion; absence of vocal fremitus; a flat note on percussion from the extreme apex to the base; absence of breath sounds and of vocal resonance on auscultation. There was dulness too on the right side in front, close to the sternum, up to the 2nd rib, and at the level of the 3rd rib this dulness extended outwards for three inches and was continuous below with the hepatic dulness. In the 4th interspace three inches to the right of the sternum, was seen the diffuse apex beat of the heart and the dulness extended slightly beyond. Both basal sounds were markedly accentuated, but there were no murmurs. The spleen was distinctly palpable, being pushed down evidently by the superjacent fluid. The urine was normal. The sputum contained no bacilli of tuberculosis, and there were no signs at this time of pneumothorax.

On the day after admission 30 oz. of creamy pus was removed, though without altering to any marked degree the physical signs in the chest. Cultures made of the fluid remained sterile. Three days later she was again aspirated, and 15 ozs., removed. This time the heart receded slightly towards the normal position; there was a tympanitic note over the upper third of the left lung, and the Hippocratic sucussion was readily obtained, and quite audible to those standing some distance from the bed. Beyond this feature, however, there were no definite evidences of pneumothorax, the coin sound and metallic tinkling not being elicited. Operation was urged but the patient refused, and nine days later she was aspirated again, this time 40 ozs., of creamy pus and lymph being removed. Great relief followed and the physical signs altered to a marked degree. There was a tympanitic note on percussion as far as the 4th rib, and from there down to the base the note was flat, the sucussion splash, coin sounds and metallic tinkling being all readily obtained. Respirations were performed with greater ease, and the patient felt in every way so comfortable that she insisted on leaving the hospital the same day.

Throughout the course of her stay, with one day's exception, her temperature remained normal. The tuberculin test was not employed.

The case is of particular interest as illustrating how insidiously pneumothorax may sometimes develop and quite in the absence of the usual acute symptoms which call for urgent treatment.

Cases of this kind have been recorded by others, particularly by S. West of London, who mentions instances where in the so called apparently healthy, pneumothorax has been found from time to time, and in many instances associated with strain. Probably in 90 per cent. of cases tuberculosis is the main etiological factor though numerous instances exist showing other causes to be at work, and in not a few the antecedent condition has been, as in our own case, quite obscure.

RETROSPECT

OF

CURRENT LITERATURE.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Surgery of the Kidney.

MORRIS. "The Hunterian lectures on the surgery of the kidney."—*British Medical Journal*, March 26th, 1898, and subsequent numbers.

These lectures are really of very great value. They deal with an important subject in which great advances have been made during the past twenty years. Mr. Morris can speak with authority as he has had exceptional opportunities for observation, and an unusually large experience in operative work upon the kidney.

In the first lecture the history of kidney surgery is briefly given, showing that although the practicability of nephrotomy was discussed during the sixteenth, seventeenth and eighteenth centuries, yet it was not established as a feasible operation until the latter half of the nineteenth.

The dawn of renal surgery admittedly dates from August, 1869, when Gustav Simon of Heidelburg, removed by the lumbar method the kidney of a woman who had a ureteral fistula opening upon the abdominal wall over the pubes, and following an ovariotomy done one year and a half before. Simon performed his operation in the face of the pronouncement long before made by Rayer that it was "madness to dream of extirpating the kidney in the human subject" For himself, he compared the result of fifteen hysterectomies with fifteen nephrectomies, practiced on animals, and satisfied himself that there was no more danger from a surgical point of view, in the one operation than in the other.

A most important advance has been made in the excision of a diseased part of a kidney instead of the whole. Cysts and tuberculous breaking-down masses have been successfully removed, without undue hæmorrhage, and the results have been satisfactory. Mr.

Morris thinks that partial resections are capable of a wider application than has yet been given to them, especially in the case of tumours taking origin from the capsule of the kidney itself.

Operations upon the ureter are an advance of the last few years and are destined to have an important influence upon renal surgery generally. Ureterotomy has been employed in the treatment of hydronephrosis, calculus and calculous anuria. Ureteral anastomosis and other plastic operations on the ureter will save many kidneys which would formerly have been nephrectomised on account of hydronephrosis, fistulæ, and surgical injuries to the ureter. The removal of calculi lodged in and obstructing the ureter is now an established operation. They have been successfully removed from the renal and vesical ends. Every abdominal surgeon should now be familiar with the different methods of dealing with accidentally made wounds of the ureter in its course and be able to unite the severed end to the pelvis of the kidney above or into the bladder below.

Mr. Morris in his second lecture deals with renal calculus; the difficulties and errors in diagnosis in their relation to exploration of the kidney, and unsuspected, quiescent and migratory calculi. He puts them in the very forefront of surgical affections of the kidney for the following reasons:

1. They are the most frequent and most painful of the surgical diseases of the kidney. Probably no disease except acute tetanus is capable of causing worse suffering.

2. Renal calculus, whilst slowly destroying the kidney, often physically disables its victims by its unrelenting irritation, and its unyielding resistance to every form of dietetic and medical treatment.

3. No disease gives rise to such a variety of morbid changes in the kidney as calculus; and none is more certainly fatal when allowed to progress without surgical interference.

4. Few operations are so successful as nephrolithotomy, by which a calculus is removed from a kidney not disorganized by the calculus or otherwise. No great operation is followed by a smaller mortality. Nephrolithotomy gives absolute cure, saving the kidney from progressive destruction and the patient from what at any moment may prove to be an imminent danger to life.

5. Renal surgery will grow in confidence and in favour with the profession and the public, as nephrolithotomy anticipates and displaces nephrotomy and nephrectomy.

6. Another reason why calculus disorders take so prominent a lead amongst the surgical affections of the kidney is because of the difficulties and errors attending their diagnosis.

These difficulties arise from four causes:

1. Several other renal and ureteral affections give rise to the same symptoms as stone.

2. Several diseased conditions of other organs cause symptoms which similate those of renal calculus.

3. Symptoms caused by renal calculus may be transferred to other organs; or may be of a psychical order, with or without high temperature, and not referred at all to the kidney itself.

4. Calculi may be for an indefinite time masked, giving rise to no symptoms whatever, yet causing the while progressive destruction of the kidney.

The symptoms of renal calculus are well-marked attacks of renal colic, with crystals of uric acid or calcium oxalate frequently occurring in the urine, and when the urine is intermittently mixed with a good deal of blood, or persistently contains a microscopical quantity. If the patient has already passed a stone, there is all the more likelihood of another. Mr. Morris' remarks on the different diagnostic symptoms are very clear and instructive, and are of great value because of his very large experience in kidney surgery. Mr. Morris lays great stress on pain and tenderness, and makes it a rule always to operate on the painful side. To illustrate I may briefly mention the following case of calculous anuria. Calculi could be felt through the abdominal wall in the right kidney, but the attacks of pain associated with the anuria were referred to the left kidney. Mr. Morris operated upon the left kidney, found a small stone in a large hypertropied kidney, and the paroxysms of pain and anuria disappeared entirely. In this connection it is pointed out that the nerve supply is such that pain is much more likely to be reflected up or down on the side of irritation, than across to the opposite side.

In this way is explained a large group of cases of *unsuspected calculi with symptoms transferred to other organs.* It is sometimes the same with the ovary or the bladder.

A third group include *unsuspected calculi with high temperature and great psychical disturbance,*—unfortunately not common. This group is illustrated by the following: The patient having been desperately ill for two or three months with symptoms of a typhoid type, attended by acute but vague pains over the whole body and with great mental prostration, the illness terminates after the discharge of a few ounces of pus and some renal calculi, presumably from the left kidney. Two or three other cases are reported, having a somewhat similar history. The difficulties of diagnosis in this group are very great. It is in such cases that catheterization of the ureter and the passing of a

sound along the ureter to the pelvis of the kidney, might give very valuable information. The character of the disturbance in these cases is one of depression, melacholia, stupor and nervous apprehension of danger. Mr. Morris does not think it due to uræmic poisoning. It occurs when there is no suppression of urine and is absent in calculous anuria when no urine is excreted for six or eight days in succession. The writer, in one instance, observed these symptoms present in an extreme degree, while from 40 to 60 ounces were secreted daily, containing 10 grains of urea to the ounce. The patient had both kidneys filled with calculi. In such cases culture experiments should be made with the urine from the diseased kidney.

The possibility of the presence of *quiescent* or *migratory* calculi should always be borne in mind. On this question Mr. Morris speaks as follows : " It is difficult to shake oneself free from the influence of tradition, and thus for years I made it a practice, in cases in which the symptoms were slight or of only recent occurrence, to treat the patients for a time upon the expectant plan. I possess several calculi which have been passed naturally ; but I now regard them as the emblems of what ought to be very largely an obsolete treatment, and from which I have had one or two rude awakenings" This is a strong position to take, and such cases offer an opportunity for the exercise of good sound judgment on the part of the surgeon.

In his third lecture, Mr. Morris deals with Fistula caused by Renal Calculus ; Obstructive Anuria caused by Renal Calculus and the technique of the Exploration of the Kidney and Ureter for Calculus.

Fistulæ are not of common occurrence, and are usually found to follow only when perinephritis or perinephritic abscess was present at the time of operation. It is, as a rule, unsafe to explore the kidney when the tissues around are in an acutely suppurating condition. The safe course is to drain the abscess and perform a second exploratory operation after the abscess is healed.

Mr. Morris recommends the oblique incision, which can, if necessary, be prolonged downward over the course of the ureter, and he does not fear much being unable to find the stone be it ever so small.

Another point emphasised in these lectures is the frequency with which complete relief of symptoms follows exploratory operations upon the kidney where no stone is found. This is sometimes due to the breaking up of adhesions, and in other cases the way improvement follows is unknown.

George E. Armstrong.

Ophthalmology.

UNDER THE CHARGE OF J. W. STIRLING.

High Myopia and its Surgical Treatment.

FUKALA. *Archiv. für Augenheilkunde*, XXV., 1897.

D. MAGEN. *Weiner Klin. Woch.*, No. 1—2, 1898.

Fukala here gives an exhaustive account of his results in the extraction of the lens in cases of high myopia. The results are certainly highly gratifying, and, if time shows that the results gained are permanent, then surely abstention from operative interference in cases of high myopia will be very culpable. Fukala operates with a Bowman stop needle—performing discission about the centre of the capsule, and if glaucoma threatens, he paracenteses the anterior chamber.

Magen adds nothing new. He holds old age is no contraindication to the operation.

The Unprotected Treatment of Wounds of the Eyeball.

T. HJORT, Christiania. *Centralblatt für Prakt. Augenheilkunde*, November, 1897.

Hjort's statement as to his method of treating wounds of the eye is certainly novel, if not startling. He allows the eye to go absolutely uncovered after an operation, and he claims that the results of his operations, especially on cataracts, are so favourable that they justify his procedure. His theory is that the natural secretions of the eye, as long as the lachrymal passages are in order and the lids work properly, perform through the flowing away of the tears a physiological toilet of the eye and are actual antiseptics. Anything that interferes with this lachrymal flow and drainage favours the development of micro-organisms, and is dangerous. Bandages act this way, and also render the eye succulent and congested, as does also the use of irritating antiseptic lotions. Epilation of the lashes must always be done, as this eliminates a markedly infecting surface.

Interstitial Keratitis following Influenza.

B. HILBERT, Sensburg. *Die Ophthal. Klinik.*, February, 1898.

Cases of this eye disease following influenza were reported after the epidemic of 1891. Hilbert now brings forward another case which

occurred during convalescence from influenza, and under treatment ran a short course of six weeks, passing through all the typical stages of infiltration, vascularization and clearing up.

Hard Chancre of the Eyelids.

GAGZOW. *Deut. Med. Woch.*, February 10, 1898.

This is the case of a child of fifteen months, in whom the inner canthus was infected from mucus patches on the father's tongue. Mercurial inunctions and local iodoform dressing affected a cure. There was but little induration.

Cortical and Psychical Blindness.

M. A. LUNZ. *Deut. Med. Woch.*, No. 38, 1897.

Lunz describes two cases with these symptoms, of which one died. The post-mortem on this case revealed arteriosclerosis of the posterior cerebral artery, and spots of softening in both occipital lobes.

Antisyphilitic treatment of the second case resulted in the partial recovery of the optical memory pictures, as well as the ability to identify new optical impressions with former ones. Here there was entire loss of colour vision and alexia which improved.

Difficulties in Localizing Cerebral Tumours.

L. BRUNS. *Wein. Klin. Rundschau.*, No. 46, 1897.

This paper is well worth careful perusal. Bruns points out many difficulties, and gives some valuable hints to assist one in localizing cerebral tumours. Tumours of the frontal lobes and of the cerebellum both cause an upset of equilibrium. Here, however, a careful investigation of the general and local symptoms clear the diagnosis, as they are very different when the tumour is in either of these two situations.

Bruns considers homonymous hemianopsia as of little value in the typical diagnosis of cerebral tumours. Right homonymous hemianopsia, associated from the outstart with alexia and word blindness, points to a tumour in the white matter of the left occipital lobe. Bruns rather lauds the method of percussion advanced by MacEwen. The anomalies of cranial percussion, tenderness, tympanites and cracked pot sound are of great importance, when they are clearly marked and exhaustive, for general diagnosis and for local when they are distinctly circumscribed. Especially is this so when they coincide with the conjectural seat of the brain symptoms. Marked tenderness and tympanites can only exist when the tumour is in the cortex.

J. W. Stirling.

Pathology.

UNDER THE CHARGE OF J. G. ADAMI.

Antistreptococcic Serum.

LOUIS COBBETT, M.B., F.R.C.S. "Antistreptococcic Serum"—*The Lancet*, April 9th, 1898.

So much has been written of late upon anti-streptococcic serum, both from the experimental side and in reference to the results of the employment of the same, and those results have been so contradictory and so uncertain that without a very full and careful study of the literature, it is impossible to arrive at any very satisfactory conclusion as to the value of the medium; and so scattered is that literature that only he who has entrance to a library singularly rich in foreign periodicals and society transactions, is able to master it. Thus Mr. Cobbett has performed a most valuable service in bringing together the literature upon the subject. His own studies upon diphtheria serum and upon streptococcus disease renders him peculiarly fitted to undertake a review of the matter, and he has in this article, contributed to the *Lancet*, treated the whole in so judicial a spirit and so fully, that little more is necessary than to summarise the more important points here on which he lays stress. Indeed the present article does not pretend to be more than an epitome of Mr. Cobbett's paper.

It is perhaps going over old ground to point out that the first to investigate the anti-bacterial and protective properties of sera, was H. Roger, who in 1890 found that the streptococcus of erysipelas grow as freely in the serum of the immunised as in that of the normal rabbit. But while it grew thus freely, the coccus had been affected, for such cultures, previously virulent, made in the serum of immunised animals were now found to be perfectly harmless, and Roger further pointed out that "if one injects the serum (of an immunised rabbit) into the veins of a rabbit, and at the same time inoculates it with a virulent culture, one can see that the animal survives, but it is on condition that it has received a large quantity (5 to 6 cc.) of the serum." As Cobbett points out, these observations were probably erroneous, for Bordet has recently shown that streptococci growing in the Marmorek's serum, lost none of their virulence; and again, if the cocci be washed free from the serum in which they have

been grown, they are virulent, thus indicating that the harmlessness of injections of streptococci grown in serum of immunised animals, is largely due to the simultaneous inoculation of the serum.

This, however, was the practical beginning of studies upon the sera inoculated with streptococci In 1893, Mironoff employed the streptococcus culture which he had received from Roger, immunised rabbits by various procedures, and found that the serum was capable of conferring immunity on other rabbits, and also of favourably influencing the course of septicæmia already progressing. In 1895, therewere several investigators working in different laboratories : Petruschky in Berlin, Borneman in Vienna, Denys and Leclef in Louvain, and in February, in Paris, Marmorek, Charrin and Roger simultaneously published their results. Marmorek had been able to so intensify the virulence of the streptococcus that a dose of 0.000,000,0001 c cm, killed rabbits, and produced a toxin of intense power. With the living cultures of this and the filtered toxins he was able to immunise animals and from them to obtain a serum which had very active and preventive powers. In a later publication he pointed out that the best serum which he had been able to obtain was of sufficient strength that 0.2 c cm. from 12 to 18 hours later, would protect a rabbit of from 1500 to 1800 grms. weight, against ten times the minimal fatal dose of virulent streptococci injection given Charrin and Roger had immunised an animal with cultures concentrated and heated to 115° C., but they merely stated that the serum was curative. In the same year and almost simultaneously appeared Gromakowsky's paper in which he recorded that he immunised rabbits with the streptococcus of erysipelas (Marmorek's streptococcus had been obtained from a case of tonsilitis) and had obtained a serum of which 2. cc. would protect rabbits from peritoneal inoculations of quantities of culture slightly larger than those which killed the control animals. Denys and Leclef in Belgium, also obtained a serum which could protect against feeble infection. Bulloch in London in the same year obtained from a horse inoculated with streptococci from erysipelas a very strong serum of which 0.02 c cm., protected against ten times the lethal dose of the culture. But Marmorek's results we need scarcely remark, were those which were of the most importance and attracted the greatest attention.

When other bacteriologists began to test the serum, there was a remarkable want of agreement. Petruschky tested it against the streptococcus of a case of human septicæmia and found that it had absolutely no protective power against this, and furthermore when he obtained from Marmorek, who gave him every help, cultures of his

own streptococcus, he got equally unsatisfactory results. Nor again when he employed it upon patients who had been inoculated with erysipelas in order to cure inoperable cancers did he get any result. Van de Velde obtained like unsatisfactory results. On the other hand Merieux and Niemann confirmed Marmorek's original observations.

How are these contradictory results to be explained? All the observers are men of recognised ability, and it would be absurd to impute to them any bias. Yet there must have been some flaw somewhere. One possibility is suggested by Cobbett, namely, that much depends upon the dose injected. He points out that streptococci differ from other bacteria, in that from their growth in chains they tend to clump together, and thus an injection of 1 c cm. of a 1,000,000 dilution of streptococcus culture into a series of animals will result in some having relatively large doses, while others receive no streptococci at all. Petruschky's tables show that Marmorek's serum was not wholly without results. Thus animals which received a dose of serum insufficient to save their lives, lived ten or eleven days while the controls died in 30 hours.

Another important matter was brought forward by Aronson in 1896, who utilising the streptococcus obtained from the pus of a case of phlegmon, the virulence of which had been raised until it was intensely pathogenic, found that whereas the serum gained from a horse inoculated with this, had a certain protective power, Marmorek's serum employed against the same microbe, was absolutely worthless. Later Merieux and Niemann tested their own serum together with Marmorek's and a serum made by Charrin and Rogers, against several streptococci including that used to produce their serum and that used by Marmorek. They found that Charrin and Roger's serum proved worthless throughout and the other sera were found to be successful, but at the same time their own serum (Serum Vaise) proved eight times as strong against their own streptococcus as did Marmorek's serum, and contrariwise, against the streptococcus of Marmorek Marmorek's serum was twice as strong as was the serum Vaise.

It is possible, therefore, that there is not one form of streptococcus, but several, and that the serum obtained from an animal immunised against one streptococcus is unaffected, or has but slight power when utilised against another. Everything points to this being the case. This matter of the existence of different species of streptococcus, is one that has been debated for long years. Everyone knows that for a long period, the streptococcus of erysipelas was held to be a distinct species from the streptococcus of ordinary suppuration; we now no longer draw this distinction, for no clear demarcation can be found between the two.

Later Lingelsheim studying a large number of streptococci obtained from various conditions, classified them into long and short streptococci (those forming long or short chains.) But we now know that it is easy to transform the long chain into the short chain form, and *vice versa*, thus the view has become almost generally accepted that in man there is only one pathogenic streptococcus, and that all the various streptococcal diseases are caused by a single species which may present modifications in virulence.

Now, however, this work upon sera is showing us that there may be several distinct varieties, and that with regard to the streptococcus we seem to be in the very same position that we were a few years ago with regard to the typhoid bacillus and its allied forms. Several facts may be mentioned in support of this contention. Thus, Van de Velde selected two streptococci, A and P, which both when introduced into the rabbits ear produced erysipelas without as a rule any septicæmic conditions or presence of streptococcus in any of the internal organs. With each of these he immunised a horse, obtained two seras, A and P, each of which he tested against these two microbes, and against the streptococcus of Marmorek and that of Belfanti. Serum A protected against streptococcus A, but had a very much slighter action against streptococcus P, while serum P protected against streptococcus P, but was absolutely useless against streptococus A. Serum A had no action against streptococcus Marmorek, and possibly a feeble action against the Belfanti streptococcus. Serum P. on the other hand, had a considerable power against streptococcus Belfanti.

Schenk with another streptococcus, obtained the same results. Mérie, found that Marmorek's serum did not protect against a streptococcus from a case of scarlet fever, yet it protected against one given by Marmorek. Courmont tested a serum obtained from Marmorek, together with serum obtained by himself from animals inoculated with Marmorek's streptococcus, against seven different races of streptococci, and he found that this serum protected against Marmorek's streptococcus, but altogether failed to protect against the others, if indeed it did not render them more susceptible to the action of this. Five of these races came originally from a case of erysipelas in man, the others from an abscess.

Lemoine did not get such a large proportion of failures with races of streptococci, nevertheless he isolated a considerable number against which the serum was inactive. Thus it is evident that the antistreptococcic serum obtained from animals which have been immunised against one race or variety of streptococcus, is incapable of protecting against every streptococcus which is pathogenic in man.

This must be regarded as definitely proved. If it be so, can we recommend the use of antistreptococcic serum, for the treatment of human disease? In attempting to answer this question we have to proceed very cautiously. In the first place, we must I think, admit that in some cases, the serum has been of use. The altered complexion that the disease has taken on almost immediately after the inoculation, has in several cases been so remarkable that the improvement in condition can only be ascribed to the use of the serum, and if there be such cases, then it would be cruel and altogether unscientific to recommend the discontinuance of its employment. On the other hand we have to acknowledge that a very large number of cases do not appear to react against the serum, and this being so, if it could be proved that the injections aggravate the disease, it would be our duty to urge the discontinuance of the treatment.

At the present time I do not think that there is very adequate evidence pointing in this direction; the inoculations in man if they produce no good, at least produce no evil result. At the most it has seemed to me that in one or two cases which more especially have come into my notice, in which the injections were at first attended with remarkable amelioration, there later developed a curious lingering condition, and while the disease was lessened in its intensity, it assumed a more chronic or lingering subacute condition, as though, while the organism had been rendered capable of neutralising the lethal properties of the streptococcus, its power of destroying the microbes had been if anything, lessened. On the whole, therefore, if the serum while incapable of having a beneficial effect upon many cases, can be shown to have no baneful influences, and if in a definite proportion of cases it is of distinct use, we must regard it as being still to be recommended, and must hope that further research will help to give us a medium of greater use in this connection.

Van de Velde makes a very useful suggestion, he recommends that the horse used to supply the anti-streptococcic serum should be inoculated with a succession of cultures of streptococci gained from a number of different cases; in this way, the serum obtained should be active against a large variety of streptococci. This suggestion seems evidently worth carrying into practice.

Cobbett himself is more cautious in his recommendations, he concludes, "We can therefore hope to gain but little evidence of any value from the experimental use of the serum in cases of human disease. The value of the remedy must be first clearly determined by experiments on animals. Until it has been shown beyond the possibility of doubt, that the serum will protect them from, and cure

them of artificial streptococcal infections; until the opinion of experimental observers is unanimous in its favour, it is not yet ready for the physician. The opinion of experimental observers is by no means unanimous. Much therefore, remains to be done before the serum can be recommended to be used in cases of human disease.

"The possibility of an anti-streptococcic serum has been demonstrated, but the remedy is yet in its infancy. For its infancy the laboratory is the proper nursery.

"The anti-streptococcic serum cannot, then, be recommended in cases of human disease. In the meantime, the physician may reasonably hope to obtain some day a specific remedy for these diseases, justified by the measure of success which the serum has already obtained in the laboratory."

From these remarks we rather take it for granted, that Mr. Cobbett has not seen the serum in action upon a favourable case. Anyone who has, and who has observed the patient, whose life seemed to be a question of but a few hours, suddenly pick up strength, and appear to be saved from the jaws of death, could scarcely give such advice.

I cannot therefore but say in conclusion that the serum is to be used at the present time with the distinct understanding that it is an uncertain agent, and is to be used when other means have failed, as a last resort, and as affording a possibility that life may be saved.

On the Treatment of Malignant Growths by Injections of Mixed Toxins.

Mansell Moullin, M.D., F.R.C.S. "The Treatment of Sarcoma and Carcinoma by Injections of Mixed Toxins."—*John Bale, Sons & Danielsson*, 1898.

Another employment of the streptococcus has caused much interest of late years, especially on this continent, from the observations of Dr. Coley of New York. We have referred to this in previous numbers of the Journal, and will not here give any full account of the results obtained. As with the employment of the serum in septic cases, so with the employment of the streptococcus toxins in cases of inoperable malignant growths, while there have been some brilliant successes, there have been numerous cases in which the treatment by the injections of the living streptococcus or again by the filtered toxins of this microbe, or again by the mixed toxins of the streptococcus of erysipelas and the bacillus prodigiosus, have failed to effect any amelioration of the condition.

To those interested in this treatment, we would recommend the above pamphlet, which is an enlargement of a paper read before the Harvian Society of London.

Dr. Mansell Moullin's conclusions are as follows :—

1. It cannot be denied that there is a considerable number of cases in which sarcomata, that had been given up as hopeless, often after repeated operations, have absolutely and entirely disappeared under this method of treatment. There is no other method of treatment (except inoculation with the streptococcus of erysipelas itself) of which this can be said.

2. Some of these cases have remained free from recurrence for upwards of three years, the period which, in the case of excision of the breast for scirrhus, is regarded by many operators as justifying the use of the term cured.

3. Several of the cases in which sarcomata have disappeared after an attack of erysipelas, have remained free from recurrence for seven years and upwards.

4. The fact that there may be a few—a very few—cases recorded in which sarcomata have disappeared, either spontaneously or after such diseases as acute specific fevers, has nothing to do with these conclusions. (The statement that sarcomata do occasionally disappear has been made but well authenticated cases in which this has taken place, verified in the way in which Dr. Coley's has been verified, are very difficult to find.)

5. Nor are the conclusions in any way invalidated by the fact that injections of the mixed toxins are sometimes followed by the disappearance of other growths, such as lupus, keloid, syphilitic deposits, carcinomata, etc. It may make the disappearance of sarcomata more difficult to understand, but in no way disproves it.

6. The proportion of cases of sarcomata that are cured by the injection of the mixed toxins, depends among other things on the histological character of the growths. Spindle-celled sarcomata are by far the most successful. This suggests the conclusion that the mixed toxins have a selective action, even if it is not specific.

7. The disappearance of sarcomata is not due to inflammation but to an intensely rapid form of fatty degeneration, comparable only to that which affects the hepatic cells in acute yellow atrophy of the liver. Inflammation and sloughing when they do occur, are septic complications.

8. Degeneration and absorption may occur, whether the toxins are injected directly into the tumours or into some distant part of the body. In the former case, however, the constitutional symptoms are more severe and the effect more rapid.

9. The method is attended by a considerable degree of danger. It should therefore only be adopted in those cases in which there is no other remedy. The chief risk appears to be from collapse and pyæmia. There must always be danger of the latter if there is a suppurating or a sloughing sore. It may be argued that patients whose lives are immediately threatened by a malignant growth will never be cured by any remedy that does not involve some degree of risk.

10. The toxins are of no use unless the cultures are taken from a virulent case of erysipelas or are made virulent by passing the streptococcus through rabbits.

11. The bacillus prodigiosus in spite of theoretical objections, has the effect of immensely increasing the reaction.

12. The effect is most striking in the case of rapidly growing sarcomata. Slowly growing ones appear to have much more resistance. Probably this merely means that masses of embryonic cells with little stroma give way to injurious influences more readily than those that are more closely knit together.

13. Patients often gain in weight and strength while under treatment.

14. Treatment should be continued till the whole growth has vanished or has become so small that it can be removed.

15. If there is a recrudescence of the disease, it does not follow that the toxins will be as efficacious the second time as they were the first. Whether this is the result of tolerance being established cannot be said.

16. Growths of a similar character may spring up in other parts of the body after many years.

17. The severity of the reaction is very variable. Probably this depends upon the rapidity with which the injection is absorbed, rather than upon any cumulative action it may possess.

The disappearance of the growths is not the result of the high temperature. High temperature due to other causes, such as specific fevers, is not followed by this result.

Coley suggests that injections of the mixed toxins may be useful in preventing recurrences after sarcomata have been removed by operation.

Incidently it may be mentioned that injections of the streptococcus of erysipelas apparently never cause suppuration. If, therefore the streptococcus of erysipelas is identical with the streptococcus pyogenes, the name of the latter had better be changed.

The only objection—and it is a most serious one—which we have to offer to Moullin's own work, is that his diagnosis is purely clinical, unsupported by microscopical examinations.

To us, a very equally valuable portion of the pamphlet is the appendix, in which Dr. Mansell Moullin has collected together with great thoroughness all the cases recorded in literature.

1. In which, in cases of sarcoma and carcinoma, erysipelas has broken out accidentally. (21 cases.)

2. In which erysipelas has been caused intentionally (17).

3. In which the toxins of the streptococcus, alone, or in conjunction with those of the bacillus prodigiosus, have been employed. This last list includes cases from American, French, German, Italian and English literature.

J. G. Adami.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron, 903 Dorchester street, Montreal.]

The Canadian Practitioner.

February, 1898.

1. The Prognosis in Cardiac Disease. J. E. GRAHAM.
2. Spontaneous Rupture of a Fatty Heart. W. J. GREIG.
3. A Note on Death from Chloroform. R. D. RUDOLF.
4. The Selection of an Anæsthetic. H. D. SCADDING.

March, 1898.

5. The Great Omentum. J. G. ADAMI.
6. Suppurative Cholangitis. H. PARSONS.
7. Two Cases of Tubercular Pleurisy with Effusion. H. H. OLDRIGHT.

April, 1898.

8. Disease of the Coronary Arteries and its Effects. G. SILVERTHORN.
9. Dicephalous Monster. W. H. PEPLAR.
10. Anæsthesia and Analgesia. H. H. OLDRIGHT.
11. The Surgical Treatment of Insanity. E. HALL.

1. GRAHAM discusses, at length, the prognosis of heart disease. In early life, valvular lesions are the result of endocarditis, and the prognosis during the attack depends largely upon the nature of the infective agent. If due to rheumatism, the immediate prognosis is favourable, but there is a liability to its recurrence. When as a result of scarlatina, it is not likely to recur, and hence the prognosis is more favourable than when due to rheumatism. Murmurs occurring during an attack of rheumatism frequently disappear, so the attending physician should not alarm the friends by predicting serious heart disease. When, however, the murmur lasts from the beginning to the end of the attack it will never disappear in after life. The question often arises: How long will complete compensation last after it has once been completely established? To determine this, it is necessary to find out, if possible, the extent of the lesion, the length of time during which it has existed, the changes which have taken place in the heart itself as a result of the lesion, the condition of the other organs of the body, the temperament, mode of life, habits and calling of the patient, hereditary tendencies and presence or absence of other

disease. After a full discussion of the physical signs of the various lesions, the comparative gravity is stated in general terms to be, commencing with the gravest, tricuspid insufficiency, aortic insufficiency, mitral stenosis, aortic stenosis, and mitral insufficiency. The social condition of the patient is an important factor in prognosis. If he is of regular habits, does not use tobacco, is either a total abstainer or a very moderate user of alcohol, possesses an even temper, is one whose calling requires a moderate amount of regular exercise, who lives among healthy surroundings and who has freedom from worry, he stands the best chance of a long life. Valvular lesions which originate after the middle period of life are usually the result of various forms of degeneration, and are often the direct result of an infection. When systolic or diastolic aortic murmurs occur in an elderly individual, and are accompanied by fever, a very guarded prognosis should be given as to the immediate results. There is a class of cases in which there is serious disease of the myocardium, when no valvular murmurs can be heard, and may be due to local or general fatty degeneration. The diagnosis of such conditions is extremely difficult, and on that account a prognosis is not usually made. One of the most frequent questions asked by a patient and his friends is with regard to the possibility of sudden death. If the patient can be assured that in his particular form of disease sudden death is not probable, it will have a wonderful influence in relieving his mind. In all cases of advanced disease there is a possibility of sudden death, but it may be safely stated that there is no danger from sudden death, in the sense of falling down dead, in any of the valvular lesions except aortic incompetence. In all the class of cardiac neuroses, palpitation, brachycardia, tachycardia, the most careful examination should be made to exclude organic cardiac disease before a prognosis is given. It will then depend upon whether the cause can be removed or not. Arythmia is more grave than palpitation.

2. Greig exhibited before the Toronto Pathological Society, the heart of a woman who had died suddenly while he was in the act of passing a soft rubber stomach tube. There was advanced fatty changes with rupture of the wall. The appearance of the woman was not such as to lead one to suspect degenerative changes. She was not very stout, and there was no disease except the gastritis which she was being treated for at the time of her death.

3. Rudolf presented before the Toronto Pathological Society, frozen sections of a dog which had died during the early administration of chloroform. There was enormous distention of the right side of the heart, both auricle and ventricle. The dog had been chloroformed in a thin sack, had struggled violently at first, breathing hard,

but suddenly the breathing became shallow and ceased. He was removed, but efforts at resuscitation were without avail. The heart could be felt beating for several minutes after natural breathing had ceased. The writer had found that some dogs were much more susceptible to the drug than others, and he suggests that the very contrary results obtained by very trustworthy observers in different quarters of the world might be explained by the use of dogs differing widely in their natures, and adds that possibly the different races of mankind and the different individuals of the same race might vary in a like manner.

4. SCADDING, writing of general anæsthetics says, that we should use the anæsthetic which is the safest, providing the nature of the operation and its method of operating offer no contrary indication. Nitrous oxide, is admittedly the safest of all general anæsthetics, but is inapplicable for prolonged administration. Next to it, no one in the face of our present knowledge, will deny that ether is safer than chloroform. He follows closely Fredk. Hewitt's comparison between the two agents and classification, and is convinced of the superiority of the method of anæsthetizing with gas followed by ether in a closed inhaler.

5. ADAMI remarks upon the little attention that has been paid to the great omentum ; there is a scanty literature upon its pathological condition, mainly upon cysts and tumours found in it. After reviewing the theories of the older writers he discusses what is now known concerning it and its function or functions. There is one feature about the great omentum which is the all-important feature histologically and physiologically, and that is the main characteristic of its structure. It is a double membrane folded upon itself, and fused together, consisting of endothelial and connective tissue elements. However delicate and however loaded with fat, its main characteristic is its great vascularity. The vascular supply is altogether in excess of the needs of the membrane itself. The great omentum may be regarded as a mechanism for supporting and keeping in position a rich aborization of delicate vessels separated by as slight a cell-layer as possible from the peritoneal cavity. The viscus may be endowed with powers of locomotion and so soon as any localized injury and inflammation manifests itself, forthwith some portion of its border, makes its way to the affected area, and within a little time becomes adherent over it and thus helps to prevent the spread of inflammation. This protective power does not seem to be present in all cases, for in typhoid fever we find that a serous rather than a leucocytic and fibrinous exudation obtains, and then no adhesions take place even though the omentum be lying over the area of injury.

The records of 150 consecutive and unselected cases are given, and illustrate the fact that the omentum may gain attachment to every viscus lying in the abdominal cavity, and does so very frequently.

6. Parsons reports the case of a woman, aged 45, in whom there was found suppuration in the upper bile passages, and extension of the process into the surrounding tissues, with abscess formation and general peritonitis.

7. Oldright describes two cases of pleurisy with effusion, with interesting peculiarities. In one the vocal fremitus, bronchial breathing and vocal resonance could be felt and heard through the effusion which extended from the level of the right nipple to the base. This may be accounted for by the compression of the lung as far as the bronchus and the density of the fibrous effusion, which clotted on being withdrawn. In the second case the peculiarity was in the paralysis of the right serratus magnus muscle, which came on some weeks after thelast aspiration.

8. Silverthorn discusses the diseases of the coronary arteries, and describes a case of rupture of the left ventricle in a man of sixty years of age. The progress of events in the heart could be easily surmised. There had been atheroma of the left coronary artery, and which was most marked in its right branch. A thrombosis of the vessel occurred as a result of the rough calcareous plates found in the artery and the partial occlusion of the vessel. There resulted an anæmic infarct of practically the full depth of the muscular tissues on the anterior surface of the left ventricle. The blood pressure was at first sufficient to tear asunder near the apex some softened or necrotic fibres of the wall, including some columnae carnae, and four days later complete rupture occurred.

9. Pepler describes an incomplete dicephalous monster. It had two perfectly formed faces placed side by side on a single head, one face looking to the front and right, the other to the front and left, the head was slightly broader than that of a fœtus at term. The body and limbs were well developed and normal.

10. Oldright discusses that subject of never-failing interest to the profession, anæsthesia. He covers the ground very fully, but does not add anything to what is already well recognized.

11. Hall reports the brief history of a woman who had spent two years and eight months in an asylum, "a hopeless case of insanity." Under an anæsthetic an examination revealed extensive pelvic disease. The appendages were removed and the uterus curetted. Convalescence was rapid, and thirty-five days after the operation she returned to her home with all the reason and energy of her former self. Arguing from the results of this case, and from the work of Hobbs of London,

and Rohé of Baltimore. Hall strongly advocates the careful examination by men experienced in those classes of cases, of all the female inmates of the various asylums.

Canada Medical Record,

February, 1999.

1. Report of Two Cases in which a Fibroid Tumour was Expelled from the Uterus after Electrical Treatment. A. Lapthorn Smith.

March, 1898.

2. Artificial Anus Closed Five Months after Colostomy. F. R. England.
3. Aneurism of the Ascending Portion of the Aorta. J. B. McConnell.

April, 1897.

4. Valedictory Address to the Graduating Class, 1898, at the 26th Annual Convocation of Bishop's College, Faculty of Medicine. J. W. Stirling.
5. Valedictory of the Graduating Class, 1898, University of Bishop's College, Faculty of Medicine. MacD. Ford.

1. These cases have already been reported in the April number of this Journal (page 304) in the proceedings of the Montreal Medico-Chirurgical Society.

2. England describes a case that came under his care in the Western Hospital. The patient, a boy of fifteen, had, five months before, symptoms of appendicitis for which he had been operated upon. The cæcum and appendix were found normal, but a tumour of considerable size was discovered blocking the rectum, and situated about four inches from the anus. The mass was looked upon as tuberculous. A left iliac colostomy was performed. The symptoms were relieved. Since the operation, the bowels had acted two or three times a day by the artificial anus. The boy wished to have the normal relations of the bowels restored.

After thorough examination to determine if the lower bowel was pervious, the fistula was separated and the bowel freed from the parietes. The omentum was found closely adherent to the abdominal wall and to the intestines. These adhesions were freed and the opening closed transversely after the method of Heinecke. No tumor or thickening could be discovered in the sigmoid or rectum. The boy made an uninterrupted recovery, and his bowels move freely twice daily without medicine.

3. McConnell relates the history of a woman, aged 32, who presented all the typical signs and symptoms of aneurism. At autopsy the site of the aneurism was found to be the ascending arch, commencing just above the aortic valves and reaching nearly to the origin of the innominate artery. The tumour itself measured six inches in diameter.

Kenneth Cameron.

Reviews and Notices of Books.

Brief Essays on Orthopædic Surgery. Including its Relation to General Surgery, its Future Demands, and its Operative as well as the Mechanical Aspects, with Remarks on Specialism. By Newton M. Shaffer, M.D., Surgeon-in-Chief to the New York Orthopædic Dispensary and Hospital; Clinical Professor of Orthopædic Surgery, University of New York City (Medical Department); Consulting Orthopædic Surgeon to St. Luke's and the Presbyterian Hospitals, New York; Consulting Surgeon, New York Infirmary for Women and Children; Member New York Orthopædic Association, New York Academy of Medicine, New York Neurological Society, etc. New York: D. Appleton and Company. 1898.

A very neat little book of 81 pages, comprising essays which have appeared at various intervals during the past fourteen years.

Dr. Shaffer first gives, briefly, a very interesting history of the development of this department of surgery into a specialty, showing at the same time the very great activity of American surgeons in this interesting field. Orthopædic surgery is defined as "that department of surgery which includes the prevention, the mechanical treatment, and the operative treatment of chronic or progressive deformities, for the proper treatment of which special forms of apparatus or special mechanical dressings are necessary." A sound warning is given against the allurements of general surgery, and it is clearly pointed out that it requires an exceptional man with a decidedly mechanical bent to succeed in orthopædic work. The author recommends that after graduation and a term of service as *interne* in a hospital, a course of study of at least five years should be demanded of those who expect to become orthopædic surgeons.

The scope, present needs and future demands of orthopædic surgery are discussed in an entertaining and instructive style. G. E. A.

Inflammation of the Bladder and Urinary Fever. By C. Mansell Moullin, M.D., Oxon., F.R.C.S., Surgeon and Lecturer on Surgery at the London Hospital; Examiner in Surgery at the University of Oxford; late Radcliffe's Travelling Fellow and Fellow of Pembroke College, Oxford, and Hunterian Professor at the Royal College of Surgeons. London: H. K. Lewis, 136 Gower Street, W.C. 1898.

A small book of 153 pages written with the avowed object of proving or rather emphasizing the fact already proved, that inflammation of the bladder is always due to micro-organisms, which in the vast majority of

cases have invaded it from without; and that what is commonly called urinary fever is nothing but septic intoxication or septic infection occurring under special conditions.

A few anatomical and physiological conditions in connection with inflammation of the bladder first receives attention. It is pointed out that there are no glands in the mucous membrane lining the bladder, and that the mucus seen in normal urine is derived from the urethra and its accessories: that the thick layer of so-called mucus or muco-pus which adheres to the bottom of the vessel in certain cases is composed of pus altered by an alkali together with micro-organisms, epithelium and debris and has no mucin in its composition.

The description of the different forms of cystitis is based on their clinical features and is instructive and well written. A very interesting fact, very clearly brought out is that while, unlike the urethra, the healthy bladder does not absorb drugs or ptomaines, yet when diseased both are rapidly absorbed into the system.

The chapter on urinary fever embodies the facts of this interesting and often very grave condition, and the directions given for catheterisation of the distended bladder and the introduction of catheteric life, in prostatic retention are such as should be more fully appreciated than is sometimes the case. While it is true that this book contains little that is new, it is full of facts that need emphasizing, and it is to be highly recommended as a most useful and helpful work. G. E. A.

Yellow Fever in the West Indies. By Izett Anderson. M.D. London: H. K. Lewis, 1898. Small 8vo. 106 pages.

This little work is of interest in that in a very modest manner it gives the author's observations and conclusions upon an experience of Yellow Fever in the West Indies, extending over more than 30 years. It does not pretend to contain anything very novel, the main object of the writer being throughout to be of service to young practitioners and others settling in the West Indies, or being called upon to diagnose and treat the disease without much previous experience of its course and characters.

Dr. Anderson gives a very clear account of the stages of this curious fever, and dwells much upon the importance of recognising its first or febrile stage, and the mitigation or alleviation of symptoms which usher in a second stage, the fall in temperature, diminution of the headache and pains of back and limbs, the diminished thirst, the quieter pulse, and the more cheerful condition of the patient. He dwells with special importance on the character of the vomit, the white or acid vomit at the beginning of the second stage followed by the development of the black vomit and development of haemorrhages in other parts of the body. Most particularly is he of opinion that the study of the urine is the mos important, in prognosis and in the recognition of the gravity of the case.

According to him albuminuria is the one constant feature ; it may be found as early as the first day and most commonly appears on the second or third day of the disease, although he acknowledges that in four out of 31 cases it was only manifested on the 5th day, and he recommends the daily examination to determine the amount of albumin as giving information as to the condition of the patient. He advises that the urine of one day, that has been treated by boiling and the addition of nitric acid, be kept until the next, to give a rapid means of comparison of the progress of the albuminuria.

The treatment which he has found most successful and which he has pursued for many years, has been the steady administration of carbolic acid and potassium bicarbonate in effervescents with lime juice throughout the whole course of the disease and until convalescence is established. It is interesting to note that Sternberg strongly recommends a somewhat similar mixture in which the perchloride of mercury takes the place of the carbolic acid as the antiseptic employed. J. G. A.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXVII. JUNE, 1898. No. 6.

ON MILK AS A DIET IN TYPHOID FEVER.

Thoughtful physicians in all ages have recognized the influence which a judiciously arranged dietary has in modifying diseased processes. Even in the early days of the healing art, the great Hippocrates in his teachings constantly emphasized the importance of a carefully regulated diet for the sick, and in more modern times the illustrious Graves considered that his chief claim on a grateful posterity lay in the fact that he had taught the profession to feed fevers. Physicians of the present day with their clearer insight into the physiology and chemistry of the tissues, are in a better position to appreciate the importance of a diet which, while supplying in an assimilable form sufficient nutriment to sustain, shall yet not place additional burdens upon overtaxed excretory organs, or by the formation of toxic products within the intestinal tract lead to still further intoxication of the system.

In no form of illness does the character of the nourishment supplied, and the amount appropriated, influence the course and outcome of the disease to a greater extent than in typhoid fever. For some years past milk administered in small quantities and frequently, has formed the routine feeding of typhoid fever almost all over the civilized world.

Very recently, however, this indiscriminate routine feeding of all patients suffering from typhoid, on milk, has had several vigorous opponents. Amongst others, Dr. Burney Yeo, of London, Dr. Shattuck, of Boston, and Dr. Barr, of Liverpool, have stongly protested against this rigid routine. They have questioned whether the large amount of solid fæcal matter frequently found as a result of this continued milk diet is not a cause of some of the perforations, which occur in the later weeks of the disease, and whether with such

a large amount of residual matter a diet exclusiuely of milk, affords a sufficient amount of nutriment to the tissues. They have, therefore, insisted that the fæces should be carefully watched for indications of imperfect digestion, and that occasionally a more generous dietary better sustains the nutrition and strength of the patient.

We have much pleasure, therefore, in publishing in this number a paper read before the McGill Undergraduates Medical Society, in which the propriety of always adhering to this diet in typhoid fever is discussed. While by no means agreeing with all the statements made, we feel convinced that an exclusive milk diet in this disease, by no means fulfils all the requirements of the case, and that a thoughtful discussion of the matter may do good.

In any continued fever we have undoubtedly to deal with an impaired secretion from all the secreting glands of the alimentary tract, the salivary, the gastric, the pancreatic, the duodenal, and the intestinal. According to Sir Wm. Roberts, gastric digestion is, however, distinctly more impaired than is intestinal digestion. The sympathy of the stomach with the general condition of the system is much more active and close than that of the intestines; the former organ approximates more nearly to the animal life of the body, the latter to the vegetative life. The stomach ceases to be the principal organ of digestion and becomes more or less of a conduit to pass on liquid foods to the duodenum. We have thus a reversion to a condition more or less infantile in character. At the same time the appetite fails for solid food, which if forced upon the stomach, quickly undergoes fermental changes, and may give rise not only to irritation and discomfort, but, by the formation of toxins, may still further depress the system. With this disturbance in the digestive functions of the patient, we also know that all febrile states are accompanied by an increased waste of the tissues of the body; a waste that appears to effect chiefly the muscular tissues, and only in a minor degree the fatty.

This waste appears to be due not merely to a deficiency in the amount of nutriment supplied, but also to an impaired power in the tissues to assimilate nutriment during the higher grades of pyrexia. Although, therefore, we may effect, by the administration of suitable albuminous food in sufficient quantities, a distinct saving in the waste of tissue, yet, owing to this defective power of assimilation at high temperatures it would appear to be impossible to maintain a nitrogenous equilibrum in patients with continuous high fever. Failure in nutrition is, however, much less marked in patients whose fever is of a markedly remittent or intermittent type, for as Bauer writes,

"the cellular elements recover during the periods of remission the power of adding to their substance and of metabolizing an excess of nutrient material."

While, therefore, it is extremly important to supply our fevered patients with albuminous food which can be utilized in checking waste of tissue, such food must be supplied in a form which can be readily absorbed and assimilated, and an effort should be made to utilize the periods of remission for giving nutriment in increased quantities, as it can at these periods be better digested and appropriated. During all pyrexial conditions an abundance of water favours the processes of absorption and elimination.

We are still of the opinion that for a majority of our patients, no food will so satisfactorily fulfil the above conditions as will fresh uncontaminated milk. It supplies all the elements needed for the nutrition of the tissues. It is cheap, and always readily obtainable. The slight deficiency in the carbohydrates is easily filled by the addition of a thin farinaceous gruel. In many instances the lack is made up by the administration with it of alcohol. Milk should, however, in all severe cases be freely diluted, with water, or a thin gruel, or a weak tea or coffee ; it should be rendered alkaline by the addition of lime water or sodium bicarbonate (ten or twenty grains or more to the pint), and should be given in small quantities at intervals of an hour or two hours. While a patient is on a milk diet a watch should be kept for symptoms of indigestion, as indicated by nausea, flatulence, and in some cases constipation. The motions should be carefully examined. Milk when given carelessly is liable to form in many stomachs a solid curd, indigestible either in the stomach or small intestines. Such curds in their passage through the intestines must be a source of much irritation and call for the more muscular effort on the part of the intestinal wall. Such a condition is especially to be avoided in typhoid fever, when either unnecessary irritation or unnecessary muscular effort in the neighbourhood of the inflamed and ulcerated patches may lead to serious results.

In cases where milk is distasteful, we may supplement it by, or substitute for it, any of the simple meat broths. The small amount of nutrition which they possess may be increased by the addition of vegetable juices, a point emphasized many years ago by Sir William Jenner. Such soups may be variously flavoured with aromatic herbs rendering them more grateful to the patient and more easy of assimilation. The various preparations of gelatine give us readily assimilated albuminous foods which prevent tissue waste. Some of the

starchy foods may also be employed with care, especially if they are combined with one of the malt extracts.

In the later stages of the disease, when the fever remits for many hours at a time and appetite returns, many good authorities strongly recommend the administration of stronger food. We, too, would echo this plea and would extend the dietary at this period to finely minced meat, eggs, soft puddings, and stale bread or toast for those who, with a clean tongue, and a keen desire for food, show no special signs of intestinal irritation.

HOSPITAL ABUSE.

An article read before the Montreal Medico-Chirurgical Society by Dr. Armstrong, will be found on another page of the present number. It introduces for the first time in this JOURNAL a subject which has been claiming the attention of physicians wherever the hospital system is found, and which in many respects seems to be as far from a solution as ever. How to discriminate between those, who, we feel, are deserving of the gratuitous services of our profession, and those who, while not entitled to them, can, by the present constitution of hospital regulations, demand such services, is perhaps one of the most difficult points to be solved. Dr. Armstrong's suggestion of a central hospital board would seem to meet this difficulty and should be given a trial. The discussion on the paper was considered to be of such importance that it was deferred until the autumn, when a more representative gathering of medical men could be obtained than during the present month. We shall be glad to publish the views of our readers on the matter and invite correspondence from those interested in the subject.

THE FORTHCOMING ELECTION AT THE COLLEGE OF PHYSICIANS AND SURGEONS OF THE PROVINCE OF QUEBEC.

The temper of the profession at large in this province in respect to the conduct of the business of the College of Physicians and Surgeons under the present regime has been so clearly shown during the last three months, that it is not necessary for us once again to point out the urgent need of reform. The profession at large has determined that the present thoroughly unsatisfactory and discreditable state of affairs must cease, and we now know that the majority is in favour of reform. *As proxies can be used solely for the election of governors and the vote of those present at the meeting decides all other questions* those who have given proxies must not individually relax their efforts

or think that it will be safe to absent themselves on July 13th. We must be present without fail for the opening of the meeting at 9 a.m. prepared to give up the entire day, and not saunter in at mid-day when the college has already been in session for some hours. We have to deal with those who are fighting for life and for position, with all that such position implies; and we have already had experience during the course of the present contest, that in order to gain votes and retain their positions sundry of the officials of the present Board are prepared to resort to practices which are not to be commended.

It must not be forgotten that under the present method of voting it is the easiest thing in the world for those politically minded to completely control the election. If the Board be united it is a comparatively simple matter for each of the 30 or so elective members to obtain personal proxies from ten or twenty professional friends, the proxies being obtained primarily in order to assure the return of the individual member, and when obtained, being thrown into the common pool, so that the united Board in this way can without difficulty control some four to six hundred votes, a number which is ample to insure the election of any board as now constituted, under ordinary conditions.

Fortunately in this present election the conditions are not ordinary, and fortunately very many of the more influential members of the Board are so disgusted with the conduct of affairs that they have cut themselves adrift from what until now has been the dominant party. Nevertheless it must not be thought that Dr. Beausoleil and his friends will submit meekly to losing the control over the affairs of the college that they have exercised during all these years, because a majority desires it.

This consideration of how easy it is for a "combine" to gain possession of medical affairs in the province, is in itself sufficient to prove the urgent necessity for a radical change in the mode of election of the Board of Governors. Under the present method if practitioners in any district are dissatisfied with the action of a member of the Board hailing from that district, they are wholly powerless to obtain proper representation. A member has no need to depend upon district support, provided that he is working hand-in-hand with the "combine": he depends upon the proxies obtained from the other members of the same; while if the district puts forward a candidate as its own nominee, that nominee, if unknown outside his district, may receive but a rare vote from other parts of the province and so in all likelihood will be hopelessly beaten, although he is the choice of his district and receives the overwhelming majority of the votes cast in the same. This has repeatedly occurred in the past.

It may be retorted, and it has been urged that the Electoral Committees, French and English, which are working against the present officials, are themselves a combine and are working for selfish ends. It has been stated by Dr. Beausoleil and his friends, that the Electoral Committees are the result of a plot on the part of the Universities to gain their own ends. We can only say that if this be so, they have gone to work in a very peculiar way, for not a single candidate recommended by those committees is connected with a University staff. The Electoral Committees simply desire to cleanse the Board and to improve its methods, and to render it thoroughly representative and respected—there is no question of the Universities as opposed to the practitioner.

Out of 1,403 licensed physicians the Reform Committee has already received proxies from 830, having a majority in every separate district as well as this general plurality in the whole province. The candidates have been selected by the districts themselves and not by the committee, and it is obvious that if the majority in each district vote with the majority in the other districts success is inevitable unless improper tactics are tolerated.

Before our next issue the meeting will have come and gone. So now for the last time we urge that every member of the profession who has the good of the profession at heart, will be present either in person or by proxy at Laval University, Montreal, at 9 a.m. on the morning of July 13th, and will do his utmost to put an end to our present discredit.

THE INTERNATIONAL ASSOCIATION OF RAILWAY SURGEONS.

Officers for 1897-8: President, Surg. Geo. Ross, Richmond Va.; Vice-Presidents, Surg. J. Alex. Hutchison, Montreal, Can.; Surg. A. L. Fulton, Kansas City, Mo.; Surg. De Saussure Ford, Augusta, Ga.; Surg. John J. Buchanan, Pittsburg, Pa.; Surg. H. L. Getz, Marshalltown, Ia.; Surg. R. R. Lawrence, Hartford, Mich.; Surg. W. Q. Marsh, Sierra Mojada, Mexico. Secretary, Surg. Louis J. Mitchell, Chicago, Ill. Treasurer, Surg. Eugene R. Lewis, Kansas City, Mo. Executive Board, Surg. A. I. Bouffleur, Chairman, Chicago, Ill. Committee on Transportation, Surg. W. B. Outten, Chairman, St. Louis, Mo. Local Committee of Arrangements, Surg. B. L. Riordan, Chairman, Toronto, Ont.

Above are the names of Officers of International Association of Railway Surgeons for this year.

The meeting will be held in Toronto on Wednesday, Thursday and Friday, July 6th, 7th and 8th, 1898. These dates have been decided on so as not to interfere with other important medical meetings in the United States and Canada ; and also because the weather will be very warm in the country to the south of us about that time, so that a large number of members may be expected to come north and enjoy the cool breezes of Lake Ontario.

This—the eleventh annual meeting—will be the first one held outside the borders of the United States.

The purpose of the Association is stated in Article 1, Sect. 2, of the Constitution, viz. :

"The object of the Association shall be to promote acquaintance and fraternal relations among railway surgeons, to secure interchange of ideas and the adoption of the best methods of development and improvement of railway surgery, and to establish it as a special branch of the chirurgical art."

At present there are about six hundred members paid up for this year, but, as many join at each meeting, a much larger number is expected. Canadian Railway Surgeons have not been very numerous at the meetings of the Association heretofore, about forty being the largest number during any year ; but a much larger representation is looked for this year.

Free transportation will be granted to members of the Association connected with railways to and from Toronto upon application through the proper officers of the Company employing such surgeons, C. M. Hays, Esq., General Manager of the Grand Trunk R'y. System has kindly signified his desire to give an excursion to the members attending the Association meetings from Toronto to the Muskoka Lake district. This excursion will probably take place on Saturday, the day following the closing of the meeting. Other entertainments of a social nature are being arranged for.

The Chairman of the Committee of Arrangements would be pleased to hear from any Canadian Railway Surgeon who would favor the meeting with a paper.

Application blanks for membership will be forwarded by the Treasurer of the Association, E. R. Lewis, Kansas City, Mo.

The President has suggested the subject of "Shock" for the special consideration of the coming meeting. Different aspects of the subject will be presented by members already chosen by the President. A daily journal, "*The Railway Surgeon*" will be published during the meetings.

An exhibition of surgical appliances and physicians supplies gener-

ally will be a feature; at Chicago last year thirty-nine manufacturers had exhibits, some firms having four or five representatives present to show their goods. The duty being now removed from surgical instruments should ensure a large show of these goods by foreign manufacturers.

GESTA MEDICORUM.

"QUICQUID AGUNT MEDICI NOSTRI FARRAGO LIBELLI."

The Maritime Medical Society also meets at Halifax during the same week. Dr. D. A. Campbell is the President-elect.

The Medical Society of Nova Scotia meets this year at Halifax, on Wednesday, July 6th. Dr. William Tobin of that city is the President-elect.

The triennial meeting of the College of Physicians and Surgeons for the election of the Board of Governors, will be held on Wednesday, the 13th of July next, at Laval University, St. Denis street, Montreal, at 9 o'clock a.m. A. G. Belleau, M.D., Quebec, and A. T. Brosseau, M.D., Montreal, Secretaries.

A new Society has been added to the many already existing. It is called the Medico-Psychological Society of Quebec. It is composed of 20 members who are attached to the various Insane Asylums in the province, and it will be devoted to the study of mental disorders.

Dr. Arthur Vallée, of the Quebec Insane Asylum, is the President; Dr. T. J. W. Burgess, of the Protestant Hospital for Insane, is Vice-President; Secretary, Dr. E. P. Chagnon, of Longue Pointe.

An Association of Medical Librarians was organised at a meeting of a number of representatives of medical libraries held in Philadelphia on May 2nd. The officers elected were: President, Dr. George M. Gould, Editor of the *Philadelphia Medical Journal*; Vice-President, Dr. J. L. Rothrock, of St. Paul. Minn.; Secretary, Miss M. R. Charlton, of McGill University, Montreal; Treasurer, Dr. William Browning, of Brooklyn, N.Y.

There seems to be a revival of literary activity among medical men. One or two doctors recently have produced very readable novels, if indeed they should not be classed in the ranks with Goldsmith, Smollet, Lever, Holmes and Conan Doyle.

Dr. S. Weir-Mitchell's "Hugh Wynne" is one of the hits of the season. The latest addition to the list is Dr. M. Greenwood's "John Armstrong" which is highly spoken of.

According to the *Universitats-Kalender* recently published, the number of medical students in the universities of Germany and the German speaking universities of Austria and Switzerland are as follows:—Vienna 1,508, Munich 1,396, Berlin 1,360, Würtzburg 742, Leipzig 724, Graz 521, Erlangen 434, Freiburg 392, Zurich 353, Breslau 345, Strassburg 329, Griefswald 293, Geneva 289, Halle 265, Bonn 264, Kiel 263, Tübingen 255, Marburg 249, Göttingen 236, Königsberg 235, Giessen 224, Bern 208, Heidelberg 203, Jena 198, Lausanne 157, Basel 149, Rostock 106.

Honors are coming thick and fast upon McGill men. We are pleased to learn that Prof. J. G. Adami has been elected a Fellow of the Royal Society of Edinburgh.

Dr. D. J. Evans, Demonstrator of Obstetrics, was, in January last, elected a Fellow of the Royal Obstetrical Society of London.

To Dr. Osler the bulk of the honors have fallen, however. He has been recently elected a Fellow of the Royal Society, and is also to receive the degrees of D.C.L. from Trinity University, Toronto, and LL.D., from Aberdeen.

The annual meeting of the Canadian Medical Association will be held in Quebec this year on August 16, 17 and 18. Medical men throughout Canada are looking forward with much interest to the event, and it is expected to be very largely attended. The membership in Canada is something like six hundred, and all the prominent physicians in the Dominion are nnmbered among them.

The present officers of the Association for the province are as follows : President, Dr. J. M. Beausoleil, Montreal ; Vice-President, Dr. C. F. Park, Quebec ; and Secretary, Dr. Marois. The General Treasurer is Dr. Small, of Ottawa, and the General Secretary, Dr. Starr, of Toronto.

One of the most successful of recent conventions was the meeting of the Ontario Medical Association in Toronto on June 1st and 2nd.

The address of the President, Dr. Wm. Britton, was a thoughtful effort dealing with matters of general medical interest. He expressed the wish that the scheme for intra-provincial registration would become an accomplished fact.

An important paper was that of Dr. R. Ferguson of London, on "The Injurious Effects of Over-wrought School System on the Health of Public and High School Pupils."

The Association passed a series of resolutions calling the attention of the Government to the fact that pupils were expected to overtake too much work and had too much home-work.

Dr. A. T. Rice of Woodstock, reported a remarkable case of "Vicarious Urination." The patient was hysterical and for a period of three weeks, presented suppression of urine. During this time there exuded three times a day from the skin of the legs below the knees a fluid having a urinous appearance, which underwent ammoniacal fermentation and contained urea. One pint to a quart was excreted each time. On Oct. 30th, 1897, a gallon was excreted in the same way in half an hour. It necessitated the patient surrounding the limbs with wrappings. The author also referred to a few other cases in the literature, but his was the most characteristic.

Dr. W. McKeown of Toronto, read a paper on "The Application of the Principles of Osmosis to the Treatment of Toxæmia." His method was to give large subcutaneous injections of normal saline and at the same time rectal enemata of magnesium sulphate. He believed that this increased the elimination of toxins by the bowel, and had treated a case of septicæmia in this way with good results.

Dr. A. McPhedran of Toronto, reported 20 cases of sporadic cretinism occurring in Ontario, with lantern views.

Prof. J. G. Adami of Montreal, read a paper upon the "Hepatic Complications of Syphilis."

The president entertained the members on June 1st, to a smoking concert, and the Royal St. Lawrence Yacht Club to luncheon.

About 180 members were present.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Manual of Operative Surgery. By H. J. Waring, M.S., M.B., B.Sc., F.R.C.S. Edinburgh and London, Young J. Pentland; New York, The MacMillen Company, 1898.

A Manual of Instruction in the Principles of Prompt Aid to the Injured including a Chapter on Hygiene and the Drill Regulations for the Hospital Corps, U.S.A. By Alvah H. Doty, M.D., second edition. New York, D. Appleton & Company, 1898.

A Treatise on Aphasia and other Speech Defects. By H. Charlton Bastian, M.A., M.D., Lond., F.R.S. London. H. K. Lewis, 1898.

A Manual of Hygiene and Sanitation. By Seneca Egbert, A.M., M.D. Lea Brothers & Co., Philadelphia and New York, 1898.

Clinical Report of the Rotunda Hospitals for One Year, Nov. 1st, 1896, to Oct. 31st, 1897. By R. Dancer Purefoy, M.D. Master; and T. Henry Wilson, Henry Jellett. R. P. R. Lyle, Assistant Masters. Dublin, John Falconer, 1898.

The Pathology of Ante-Natal Life—An Address delivered before the Glasgow Obstetrical and Gynæcological Society. By J. W. Ballantyne, M.D. Reprinted from the Glasgow Medical Journal, April, 1898.

A Clinical Study of Kryofine. By Sydney V. Haas, M.D., and J. Bennett Morrison, M.D. Reprinted from the New York Medical Journal, March 25th, 1898.

Injuries from "Live" Electric Light and Trolley Wires. By J. J. B. Brownson, M.D. Reprinted from the Tri-State Medical Journal and Practitioner, April, 1898.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXVII. JULY, 1898. No. 7.

Original Communications.

UPON THE EXISTENCE OF A MINUTE MICRO-ORGANISM ASSOCIATED WITH CASES OF PROGRESSIVE PORTAL CIRRHOSIS.[1]

BY

J. G. ADAMI, M.A., M.D., F.R.S.E.

Professor of Pathology, McGill University, Montreal.

It will be known to members of this Society that, working in 1894 and '95 in Nova Scotia, I was not only able to confirm the previous observation of Wyatt Johnston, that a very interesting disease occurring among the cattle in a district to the north of the Peninsula, was infectious and epizöotic, but further, obtained from cases of this so-called Pictou Cattle Disease, a characteristic micro-organism pathogenic for rabbits and guinea pigs. This organism I found constantly in the cultures from the livers and abdominal lymphatic glands, and fairly frequently in cultures made from other organs.

The main feature of this Pictou Cattle Disease is a peculiarly extensive cirrhosis of the liver accompanied by swelling of the periportal and retroperitoneal lymph glands, with some ascites and a condition of multiple follicular ulceration of the fourth or true stomach. The ulcers are generally found in a cicatrised condition.

The first recognisable symptoms (of which the most marked is the rapid diminution in the amount of milk given off together with a peculiar bitter taste and odour of the same when heated) occur only from 24 hours to ten days before death: evidently therefore the extreme cirrhosis of the liver must have been advancing for a long period without symptoms. Death occurs most frequently with progressive weakening and paresis; in some few cases there is a period

[1] Read before the Montreal Medico-Chirurgical Society, June 20th, 1898.

of intense excitement almost maniacal followed by exhaustion and death.

The micro-organisms present in this disease are most difficult to stain in the tissues; indeed, the difficulty that I have found in determining any method whereby they can with certainty be demonstrated, has prevented me so far from publishing an extended description of my results.[1] Apparently they stain easily, but lose their stain with extreme facility. With practice I have been able to recognize them in an unstained form in the tissues and in this condition they have a faint brownish tinge and a halo is faintly but definitely recognisable. For a long time it appeared to be almost a matter of chance whether I was able to stain them or not, or more correctly, only if I was fortunate enough to clear the sections with sufficient rapidity did I get the microbes stained. Yet another difficulty in staining this micro-organism has been its minute size within the tissues, so that with the ordinary 15th inch immersion which I have used until the last year or two, unless they were stained to the right extent, neither under nor over stained, they were recognisable with great difficulty. Still, there they were, and under the proper conditions they could be found in great numbers in the liver and abdominal lymphatic glands.

If thus an extreme condition of cirrhosis of the liver is brought about in animals by the proliferation in the tissues of a micro-organism which sets up the chronic and progressive hepatic disturbance, it has seemed to me possible that a similar result may be produced in man. As a matter of fact, for some years past Hanot and the French school of Pathologists have insisted that one form of cirrhosis—the large, smooth, cirrhotic liver with jaundice, the form now frequently spoken of as Hanot's cirrhosis—is of infectious origin, though they have not been able as yet to declare what is the microbe causing the infection. To the best of my knowledge however, no one has so far ventured to state that the more common or so-called atrophic cirrhosis, the ordinary hobnailed liver, is of microbic causation. While the time has gone past when it was taught that such hobnailed livers are directly caused by alcohol, the prevailing opinion is that alcohol or other irritant by setting up a condition of chronic gastro-enteritis and destruction of the mucous membrane of the upper portion of the intestinal canal, permits the absorption of toxic substances from the food, and these toxic substances taken up by the portal blood induce

[1] Statements concerning my investigations in Nova Scotia and early studies of the micro-organisms associated with the disease are published in the Reports of the Department of Agriculture for the years 1894 and 1895. At the Montreal meeting of the British Medical Association last year, I also read a paper upon the subject, of which epitomes were published in the *British Medical Journal*, *Lancet*, &c.

a surrounding chronic phlebitis with or without direct action upon the liver cells.

During the last four years I have carefully studied all cases of hepatic cirrhosis which have come to the post-mortem room at the Royal Victoria Hospital to observe whether I could make out the existence in them of micro-organisms to such an amount and so constantly that we may safely conclude that the disease is associated with the presence of these micro-organisms. Here again the same difficulty pursued me as was present in the earlier stage of my studies upon the Pictou Cattle Disease; at times I could distinguish in sections the presence of numbers of minute diplococcus-like bodies, but further sections from the same case did not stain well, and there has been the added difficulty that the liver contains so many fine granules that in the unstained condition it is extremely difficult to make oneself positive that what one sees is not of the nature of some cellular precipitate or fine deposit. In two cases in 1895 and 1896, I thought that I had gained cultures from the liver, but upon growing these they were overrun with the colon bacillus and I lost them. In a more recent case, during last month, I was able to gain from an agar tube of the liver juice an extremely minute diplococcus staining with great difficulty, and scarcely visible. The tube was reported to me as being sterile and only upon the 4th or 5th day of the growth did I examine it myself, and found there this presence of small micro-organisms in small numbers, but when I tried to make further growths the microbe had already died out, if indeed, what I saw was anything beyond the microbes already present in the juice, upon inoculation of the tube, which had not proliferated..

In connection with this case, which was one of atrophic portal cirrhosis with pigmentation, I have been able to find micro-organisms in considerable quantities in the tissues. Dr. Abbott, who has been working on this case more especially in connection with the pigmentation of the organs, showed me some sections of the abdominal lymph glands which she had stained by Weigert's fibrin stain, and which under the high power had a peculiarly granular appearance. Upon examining with the 18th inch immersion, I found that the fine granules resolved themselves into great numbers of minute microbes of the character which I had learnt to recognise in connection with the Pictou Cattle Disease: namely, the micro-organisms present were extremely minute, even smaller than those seen in the Pictou Cattle Disease; in the main they were present as diplococci with a slight halo round them, very much smaller than the diplococcus of pneumonia, but like that organism certain of those present were longer and more distinctly in the form of diplo-bacilli.

Many of the forms present resemble closely minute editions of the gonococcus. Further, the micro-organisms vary to some extent in size; this may be a matter of imperfect staining or may be another evidence of the polymorphism to which I have already drawn attention. On the whole, inasmuch as certain examples are distinctly bacillary, the organism then should be placed among the bacilli rather than the diplococci.

Examining a series of livers by Weigert's fibrin method, I am in doubt as to whether the bacilli truly resist the action of the iodine solution, for while I get good results in some cases, in others I see a very large number of what I may term 'shadows.' It may be therefore only that the bacteria are relatively resistent to the action of the iodine.

To-day I have elaborated a still more satisfactory stain which shows the presence of bacteria with certainty. The method is as follows:

Taking the sections that have been well hardened and cutting them by the freezing microtome, I place them for a minute or two in a weak solution of acetic acid in order to clear the cells as much as possible. I then wash out the acetic acid and place in absolute alcohol; from this I transfer to a solution of methylene blue in anilin oil. This oil takes up the blue with fair ease and I employ a half-saturated solution. In this I leave the sections for half an hour. The methylene blue anilin oil mixture has the advantage over an anilin oil gentian violet mixture in that it does not overstain. At the end of half an hour I transfer the sections for a quarter of a minute into a mixture of two parts of anilin oil to two parts of xylol, then rapidly into xylol. If there is any tendency to excessive stain, I treat them for a longer period with a mixture of two parts of anilin oil to one of xylol before placing in the xylol; they then are mounted.

The method is not perfect, for the tissue is not completely decolorised; nevertheless, the bacteria are to be seen clearly in the newly formed connective tissue. Staining by this method I also find that not all the bacteria take the stain completely; there is a large proportion which has retained a brownish tinge, but these from their diplococcus shape and faint halo, can only be microbes. Many of the microbes are also without doubt within the liver cells.

I thus come to the conclusion that a large number of the microbes present are probably dead, and have absorbed some colouring matter from the blood or the bile. So far I have come across this one form in very considerable numbers in every case of advanced hobnailed cirrhotic liver which I have examined (five cases) with one possible

exception, the exception being a case in which the undertaker had embalmed the body, and the crystals and débris of the embalming material cause so much dirt in the sections that it is difficult to make out the state of affairs, but even in this case I believe I can detect some of the characteristic bacteria.

Thus at the present time I would go so far as to say that in a certain number of cases, at least, of hobnailed liver, there is present, more especially in the liver and the abdominal lymph glands, a minute micro-organism resembling closely that found pathogenic in the infective cirrhosis of cattle; a form which is present most frequently as a minute micrococcus but sometimes has a more bacillary appearance, and which is thus to some extent polymorphous.

Appendix, July 9th, 1898.

Since reading this communication, through the kindness of Professor Hektoen and Dr. Flexner, I have had the opportunity to examine fifteen other livers showing distinct evidence of portal cirrhosis from the material at the Rush Medical College, Chicago, and the Johns Hopkins Hospital respectively. I have not, as yet, examined all the material from the latter source, but in all the Chicago cases, as in ten well marked examples from Baltimore, I recognise the appearances above described. More satisfactory staining of the doubtful case above mentioned, show the undoubted presence of diplococci.

A fuller description of my observations, together with the description of the bacillus, isolated by me recently from a case of cirrhosis, will be communicated to the meeting of the British Medical Association, at Edinburgh, by Dr. Osler. I would only add here that the methylene blue, anilin oil method of staining described above, while giving very fair results for immediate study, does not in my hands yield permanent specimens, the dye tending to fade out of the microbes.

THE NEW BRITISH PHARMACOPŒIA.

BY

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For some time past the medical profession, not only in England, but throughout Greater Britain, has been awaiting with interest the appearance of the New Pharmacopœia. The volume is now before us.

To us in Canada, the edition is of interest as being the first in the preparation of which any reference has been made to the wants of the more distant portions of the empire. In the preface it is stated that assistance has been sought from the various medical and pharmaceutical bodies in the Dominion, India and the Colonies, and that many of the recommendations of these bodies have been incorporated in the text of the present edition. We are also informed that an addendum will shortly be published dealing at greater length with plants and medicinal substances which have as yet a comparatively local reputation and employment, but which nevertheless are recommended for notice by the official representatives of the medical profession in the more distant parts of the empire.

On examining the volume we notice that the metric system, which in previous editions was employed as an alternative only in the paragraphs relating to volumetric analysis, is in the present volume employed exclusively in these paragraphs, while such alternative employment is now extended to every official paragraph which makes use of the usual imperial system of weights and measures. Throughout the volume, we find both systems in juxtaposition, but the quantities thus given are not to be assumed as the equivalent of one another. Preparations made according to either system will contain as nearly as possible the same proportion of ingredients, but as a matter of course the two systems cannot both be used in the same operation.

The description of the various articles in the Pharmacopœia has undergone complete revision in the present edition. No subject is said to have given the committee more trouble than this part, for they have had to recognise as far as possible conflicting opinions on the part of experts. The alterations coming under this head, while not a matter of special interest to us, as practitioners, will we think be welcomed by our pharmaceutical brethren. Here it is sufficient to state that almost every article bearing on the description, source and botanical origin of

drugs, has undergone some modification. The changes thus made, will, we think, be admitted by all to be a distinct improvement.

With the alteration in the description of the drugs, numerous alterations in nomenclature have been made. Hydrochlorates are in future to be called hydrochlorides, and hydrobromates, hydrobromides. The Pharmacopœia no longer speaks of bromide of sodium, carbonate of lithium, &c., but of sodium bromide, lithium carbonate, &c. Carbolic acid is now termed phenol, and arsenious acid, arsenious anhydride Many of the Latin names have also been altered. Creasotum is now spelt creosotum, and asafœtida, asafetida. Ipecacuanha becomes ipecacuanhæ radix, and gelsemium, gelsemii radix, coca becomes cocæ folia, &c. The words aloin, pepsin, and pyroxylin, become now aloinum, pepsinum, and pyroxylinum. Tabellæ nitroglycerini become tabellæ trinitrini, while the modified preparations of lunar caustic become now argenti nitras mitigatus, and argenti nitras induratus. Another change is in the gender of all names ending in "*as*," such as carbonas, tartras, &c. Such were formerly regarded as feminine, now they are regarded as masculine, and associated adjectives must correspond. This brings the English Pharmacopœia in line with those of continental Europe and of America.

Considerable freedom has been exercised in the matter of discarding obsolete drugs. The names of 188 have been dropped from the present edition. In regard to the great majority of these, we are sure that the general feeling will be one of thankfulness. As to a few of the omissions, however, the feeling with many in Canada will be that of surprise. We are at a loss to understand, why cinchonine and cinchonidine should have been dropped, or veratrum viride with all its preparations, or extract of aconite, acetic extract of colchicum, and extract of socrotrine aloes. Possibly some of these may reappear in the addendum shortly to be published.

Examining more carefully the list of drugs omitted we note that all the cataplasmata, enemata, vapores, and most of the decocta have disappeared. The reason given by Dr. Leech in a recent article, is that the Pharmacopœia is not issued for the purpose of indicating the methods in which drugs may be employed. Doubtless in this the profession generally will agree with him. In this *index expurgatorius* we also note that all dietetic substances, such as pearl barley flour, bread crumbs, eggs, milk, cucumbers, lettuce, vinegar, &c., substances, which, as the *Lancet* says, were intimately associated in the professional mind with the constituents of a salad, or with the index to Mrs. Beaton's domestic pharmacopœia, are no longer stamped with the official brand. With these have disappeared most of the domestic

remedies, such as poppyhead fomentation, camomile tea, manna, oak bark and its decoctions, &c.

Further it is not considered necessary to include among the official drugs many of those substances from which drugs are obtained, especially where such drugs have distinct characters and can be easily tested, as for example, star anise fruit, sabadilla, santonica, creta, &c. Many substances whose popularity has waned have also been omitted; among these are noticed bael fruit, canella, animal charcoal, berberine, frangula bark, mastich, tobacco, savine, rue, kamala, matico and bromine. Many chemical substances are also left out which formerly were used as tests.

A large number of preparations have disappeared or have been more or less altered. It has been felt that the last two Pharmacopœias have been unduly burdened, and a beginning has now been made in decreasing the number of preparations of individual drugs.

Among the more important of these omissions we note that the two citrates of bismuth and ammonia have disappeared. They were rarely used except in the official solution, which still remains. Of the preparations of iron, seven have been discarded, the granulated sulphate was regarded as merely a convenient form of the official salt; the pill of the iodide of iron was regarded as unstable, and with the introduction of the pill of iron the necessity for a carbonate of iron pill has ceased; the tincture of the acetate of iron will scarcely be missed, but many we think will regret the omission of the solution of dialysed iron. The reason for its omission is said to be its uncertain strength and the fact that it is readily decomposed.

Three preparations of opium and three of morphine have been discarded: the confection and the wine of opium were regarded as relics of the past, while the lozenge of morphia supplies our requirements better than the previously official lozenge of opium. It will surprise many to find that the sulphate of morphia and its preparations have been omitted, but the solution of bimeconate will scarcely be missed. In their place we have a new salt, morphine tartrate introduced on account of its stability and solubility.

Calamine, a favourite with many practitioners, and defined in the last Pharmacopœia as a native carbonate of zinc, turns out to be almost entirely an artificial preparation; it is in fact an oxide or carbonate of zinc coloured in various ways. One of two courses had to be taken: either to introduce an artificially coloured oxide or to omit calamine altogether; the latter course has been adopted.

Water and proof spirits both disappear from the new official list. Wherever water is employed, distilled water is specified. Only in

those cases in which distillation is employed in producing the special preparation is "good natural potable water" directed to be employed. The name proof spirits has been abandoned. Careful enquiry as to the best menstruum for extracting the active principles of drugs, has led to the adoption of ethylic alcohol in five several degrees of dilution containing respectively, 90 per cent., 70 per cent., 60 per cent., 45 per cent., 20 per cent. of alcohol. The 90 per cent. alcohol is called *spiritus rectificatus* in Latin, and has the synonym in English of rectified spirit. Its purity and strength are well defined.

Referring now to the various official forms of preparations in order, we note that no changes of importance have taken place in the list of acids or vinegars, one acid only, the dilute lactic, has been omitted.

Among the *aquæ*, we notice that chloroform water is now only half the strength it was previously; other waters are little changed.

Three of the plasters have disappeared, namely the plaster of iron, galbanum and brown soap. They will not be missed.

The word essence now disappears from the Pharmacopœia, being regarded as savouring of old-time medicine. All solutions of the essential oils in alcohol are now termed spirits, but the strength of these solutions is increased in nearly every instance; it is now 1 in 10 instead of 1 in 50 as previously.

Of the confections four have disappeared, namely, those of opium, hips, scammony and turpentine. The confections of senna, sulphur, pepper, and roses are retained with comparatively little alteration.

Many extracts have been omitted; of these the most important are:

Extractum Aconite
Extractum Aloes Socotrinæ
Extractum Calumbæ
Extractum Colchici Aceticum
Extractum Conii
Extractum Gelsemii Alcoholicum
Extractum Hæmatoxyli
Extractum Jaborandi
Extractum Lactucæ
Extractum Lupuli
Extractum Quassiæ

The strength of the alcoholic extract of belladonna has been reduced to one-third of its previous strength, bringing the dose down to that of the green extract. One wonders why the latter has been retained, as it is the only preparation of belladonna, with the exception of the succus not standardised. In reference to the acetic extract of colchichum, Dr. Leech says: "The acetic extract of colchicum was introduced on the supposition that acetic acid dissolves the active principles of the drug more readily than water. This is not so. The ordinary extract is a perfectly efficient preparation." Ergotin is now to be known as the extract of ergot. This is wise. The sooner the name ergotin is dropped by the profession the better. It is only confusing One new extract appears, the extract of strophanthus.

The omissions in the list of infusions number seven. On this subject the committee state that an effort was made to prepare in a concentrated form the three decoctions and twenty-two infusions still retained in the Pharmacopœia, but it was found that some underwent deterioration by keeping, or were wanting in flavour and aroma, and were accordingly rejected; the more successful have been admitted into the Pharmacopœia under the title of Liquores Concentratæ.

The following is a list of them. It is to be noted that they all contain a small amount of alcohol.

Liquor Calumbæ Concentratus.
Liquor Chiratæ Concentratus.
Liquor Cuspariæ Concentratus.
Liquor Krameriæ Concentratus.
Liquor Quassiæ Concentratus.
Liquor Rhei Concentratus.
Liquor Sarsæ Compositus Concentratus.
Liquor Senegæ Concentratus.
Liquor Sennæ Concentratus.
Liquor Serpentariæ Concentratus.

Fifteen liquors have been omitted; among these are included, the effervesing solutions of potash, soda, and lithia, which are deemed hardly worthy of official recognition, having more of a dietetic than a medicinal character. The stronger solutions of acetate and citrate of ammonia have also disappeared, as it was found that the fresh solution supplied a more palatable preparation. The solution of iodine (Lugol's Solution) is now discarded, but its name passes on to the liniment of iodine, the composition of which is slightly altered. It will in future be known as the Liquor Iodi Fortis.

Among the more important of the new liquors introduced is a solution of ethyl nitrite in alcohol. It is directed to contain when freshly made 3 per cent., but never less than $2\frac{1}{2}$ per cent., by weight of ethyl nitrite. Dr. Leech says of this "It will not take the place of the spirit of nitrous ether as a diaphoretic, but will be chiefly used as a remedy for dyspnœa, for which the spirit, on account of the uncertain amount of ethyl nitrite it contains, is not well fitted."

The solution of hydrogen peroxide (Liquor Hydrogenii Peroxidi) now becomes official; also that of witch-hazel, and that of coal tar. A fresh departure is made in recognizing dried thyroid, and thyroid solution; and in introducing liquor pancreaticus, the committee have paid the compliment to Sir William Roberts of following his formula.

The liquors, which in previous editions were supposed to represent a 1 per cent. solution, but which were found in practice to deviate from this strength considerably, have in the present edition been brought back to absolute uniformity (1 gramme in 100 cubic centimetres, or one grain in 110 minims).

The hypodermic injection of morphine is now prepared from the tartrate. It is to be noted that it is only half the strength of the 1885

injection. When made according to the previous formula it was very liable to deteriorate.

No changes of importance have taken place in the group of liniments, although many minor alterations have been made.

Two mixtures disappear: the aromatic mixture of iron which was both unchemical and unsightly, and the mixture of scammony.

The oleo-resin of cubebs, the oil of rue and the oil of savine are no longer official.

Three pills only are omitted, the pill of hemlock which was inert, and the pill of the carbonate of iron, and of the iodide of iron, to both of which we have already alluded. One new pill that of quinine sulphate has been added. The pill of phosphorus contains under the new formula nearly twice as much phosphorus as under the old. In the preparation of many of the pill masses, confections have been replaced by bitter extracts; in some instances syrup of glucose, which has long been known as an excellent excipient is employed.

Three syrups have been dropped, the syrup of mulberry, the syrup of poppy heads and the syrup of subchloride of iron. Several have been added: the well known Easton's Syrup is now official under the name of the syrup of phosphate of iron with quinine and strychnine. A syrup of calcium lacto-phosphate, resembling that of the United States Pharmacopœia is now made official. We note also among the new introductions a syrup of codeine containing a quarter of a grain of the phosphate to the drachm, which will probably prove useful. There is also an aromatic syrup made official containing tincture of orange, cinnamon water and syrup, which will probably meet with general acceptance as a flavouring agent.

All the suppositories containing soap are now dropped, as well as the suppository containing mercury. Two new ones have been introduced, one of phenol, and one of belladonna.

The tinctures in the old Pharmacopœia number 75. Three new ones are introduced; the ammoniated tincture of ergot, a tincture of Virginian prune, and a tincture of quillaia. The following are omitted:

Tinctura Aurantii (Cort. Sicc.)	Tinctura Laricis.
Tinctura Chloroformi Composita.	Tinctura Lobeliæ.
Tinctura Ergotæ.	Tinctura Sabinæ.
Tinctura Ferri Acetatis.	Tinctura Valerianæ.
Tinctura Gallæ.	Tinctura Veratri Viridis.

Tinctura Zingiberis Fortior.

In the preparation of the tinctures, the special dilution of alcohol is employed, which has, after careful testing, been found to act best as a menstruum in the case of each drug. Changes have been made also in the method of preparation in many instances.

More important, however, to the practitioner, than mere omissions and additions are the changes in strength and dose, in respect of which the whole group has been reduced from a condition of chaos to one of comparative uniformity. All tinctures are now divided into two classes, in one of which the strength has been arranged so that the dose averages from 5 to 15 minims. In the second class the dose varies from half a drachm to a drachm. This involves many important changes in strength among which the following are to be remembered :

Stronger —Tinctura Belladonnæ (twice previous strength.)
Tinctura Chlorof. et. Morph. Co. (four times in Morphia.)
Tinctura Colchici (nearly twice.)
Tinctura Lobeliæ Ætherialis (nearly twice.)
Tinctura Nucis Vomicæ (twice.)
Tinctura Podophylli (twice.)
Tinctura Quassiæ (three times.)
Weaker.—Ext. Opii Liquidum (three quarters.)
Tinctura Aconiti (two-fifths.)
Tinctura Strophanthi (one-half.)

A few new lozenges are introduced, and the basis of almost all has been altered ; many of them now contain black current paste under the name of fruit basis. The new lozenges introduced are the lozenge of phenol, of eucalyptus gum, of rhatany and of rhatany and cocaine ; the lozenge of opium has been omitted.

Among the ointments we notice that the ointment of tartarated antimony is now officially discarded, along with the ointment of sulphurated potash, and the ointment of turpentine. All the ointments containing alkaloids have now a certain amount of oleic acid in their formula to act as a solvent for the alkaloid. In the majority of ointments, paraffin is now used as a basis. Five new ointments are introduced : these are rose water ointment, capsicum ointment, cocaine ointment, mercuric oleate ointment, yellow mercuric oxide ointment and paraffin ointment.

In a large number of the official preparations, although no alterations have been made either in their name or strength, minor alterations have been made in their mode of preparation. To a few only of these have we referred, considering that they interest the pharmacist more than the medical practitioner.

Many much used substances have not been made official, because on enquiry it was found that they were proprietary preparations, made only by foreign firms, and purity tests could be of no service.

Many changes have been made in the official posology. With regard to this portion of the work there will probably be many conflicting opinions. In the preface it is expressly stated that the quantities appended are intended to represent average doses in ordi-

nary cases for adults. They are meant for general guidance, but are not authoritatively enjoined by the council. In previous editions there were many discrepancies in this portion of the work. In many cases the amount of active ingredient contained in the doses given for a drug, and for its various preparations differed widely. In the present edition, an attempt is made to make the doses of similar preparations more uniform, and the disparity in active ingredients between doses of different preparations of the same drug has, as far as possible, been removed.

Although the Pharmacopœia, as published, contains exactly the same number of pages as the Pharmacopœia of 1885, only 389 of its 535 pages are occupied by the Pharmacopœia proper, 83 pages less than was occupied in that of its predecessor. The remainder is taken up by several appendices and a very copious index. The appendices themselves need not detain us beyond the statement that they contain full directions for the various tests, and their employment, and for the various processes employed in the preparation of tinctures, lozenges, &c. The most important part to the practitioner is the index, which occupies 90 pages, almost a fourth as much space as the matter which it deals with. It has been carefully elaborated and will undoubtedly be of much service to the practitioner, affording at a glance not only the names of all the official preparations of a drug, but also the dose of each, and where it has been thought advisable the strength of the preparation.

CONTINUED IRRIGATION OF THE UTERUS VERSUS HYSTERECTOMY, IN ACUTE PUERPERAL SEPTIC METRITIS.

BY

HORACE MANSEAU, M.D.

The reports of the following cases will serve to show that continued irrigation of the uterus is a most effective method in those cases of puerperal metritis, in which by many surgeons, hysterectomy would be looked upon as a last resort.

A communication on the subject from the pen of Dr. Hiram N. E, Vineberg, in the *New York Medical Journal*, of April 2nd, 1898, impressed on my mind the importance of advocating uterine irrigation. From the article in question—a report of eight successful cases of hysterectomy for acute puerperal septic metritis—we are led to infer that success has followed every intervention, although possibly such was not intended by the author.

The removal of the appendages or of pustubes seems to be at present best and most conservative surgery. It is not so, however, in regard to infected mastoid cells for instance, here the surgeon is content to open into the infected cavity so as to be permitted to wash away the micro-organisms, and the accoucheur while dealing with the same enemy might attain a like result by following the same line of treatment, that is, by opening up and thoroughly washing out the cavity of the uterus and so do away with the necessity of amputation of the organ. Every text book, every professor of surgery, is now preaching the necessity of drainage. It is for this purpose that the abdomen, the chest, and the head are being repeatedly opened, and there is equally good reason for applying the same method of treatment to the uterus.

For years past it has been my custom to wash out the uterus at the first rise of temperature during the puerperium and to keep washing it out as long as the temperature was above normal. It is hardly necessary to state that sepsis is the cause of 98 per cent. of all serious trouble met with after child-birth, and that the uterine cavity is an extremely favourable ground for the developement of septic pathogenic germs, as besides being a perfect culture medium the tendency to drainage is very slight. The os on contracting, will, together with the sphincter vaginæ form a partly closed barrier to the escape of the discharges. Taking for granted that septicæmia is due in the majority

of instances to a retained portion of placental tissue, the curette should first be resorted to and the dull is preferable to the sharp curette because it does not produce lacerations of the partly healed surfaces and so provide fresh material for the germs to grow upon. Afterwards, continued irrigation should be carried out to complete the work of the curette and cases that it will not cure will not be saved by the removal of the uterus. The following cases have been treated by this method.

Case I.—In 1885, Mrs. W., aged 28 years, a resident of Duluth, Minn., gave birth to her third child, a female weighing 9½ pounds. The labour lasted six hours and was in every respect a normal one; the expulsion of the placenta was complete and followed within half an hour, and although the fourchette was torn, the perineum was intact. All went well until the fourth day, when at four o'clock in the afternoon she suffered with headache and had a chill, and her pulse rose to 126, and the temperature to 103½°. A vaginal douche of 1 to 6000 bichloride was ordered every three hours. The following afternoon (5th day) the symptoms were aggravated, the pulse 135, temperature 104½°, and she had another chill. There was no fetor, but a profuse vaginal discharge of flake-like muco-pus. The uterus was then washed out every three hours, but the succeeding day showed still no improvement, the pulse was very rapid, and a chill of an hour's duration followed by profuse sweating had taken place. The milk was fast leaving the breasts. I had noticed that after each intra-uterine douche temporary improvement occurred in the patient's condition and consequently commenced irrigation on the sixth evening at 8 o'clock. Water was kept flowing continually for twelve hours at the rate of seven or eight gallons an hour, and on the seventh day the temperature had fallen to 100° and the pulse to 115, and the general condition was much improved. Irrigation was then stopped and five hours later when again seen the temperature was higher than ever. On the eighth day at 3 p.m., the irrigation was resumed and kept up for nearly twenty-four hours, and the temperature had by this time fallen to 99½° and the pulse to 110. After having given directions to continue the treatment for three hours longer, I left the house at five o'clock to take a rest. On returning the following day I found that a midwife, who had quite a local reputation, had been sent for from a town a hundred miles away, and, on arrival the previous day, had stopped the treatment. She greeted me with "The patient is now in a dry bed and feels much better already. The case is an ordinary one and no one need worry." I felt sufficiently sure of the result to predict that unless my treatment was resumed the

poor woman would soon be beyond hope, but I was not permitted to interfere, although the temperature was then already rising. On the following day, however—the tenth—the husband who knew enough to count the pulse beats, came to me and requested me to take charge again. On entering the sick-room I found the temperature 106½°, and the pulse 180, and the patient delirious, with tympanitic and painful abdomen, and the genital tract bathed with pus. Several chills had occurred since the previous visit. Dr. Wallack, a local practitioner of much ability, was called in consultation, and together we decided to resume at once the intra-uterine irrigation, with of course heart stimulants and careful feeding. For some hours the irrigations did not seem to have the same effect as on the previous occasions and, fearing that the nozzle of the syringe (an ordinary uterine one) was not acting satisfactorily, I substituted a male catheter No. 12, and increased the amount of water from 7 to 12 gallons an hour. Some difficulty was experienced in getting the catheter to enter the uterine cavity. After 40 hours work with four suspensions of never more than an hour at a time, the temperature was found to have reached 100°. It was noted that even during the hour's interval the temperature at once commenced to rise and increased from one-half to one degree.

It was now 1 p.m., on the twelfth, and a few hours rest was allowed with the result that the temperature rose to 101° by 4 p.m., and a slight chill occurred. Irrigation was again taken up and kept up with an occasional intermission of never more than three hours for three days longer, by which time convalescence had become permanently established.

Would not this most severe case be considered under the present conditions a very strong suggestion in favour of hysterectomy, and is it not most instructive in many ways? At the outset the temperature was controlled by irrigations at the rate of seven gallons of boiled water per hour, but later on it was found necessary to increase the amount to twelve gallons in order to bring about the desired result. If less water was flowing or the stream interrupted for even an hour at a time, the temperature was sure to rise and sometimes with astonishing rapidity, and it was only on the 16th day after the confinement, and the 10th of the nearly continuous irrigation that convalescence was permanently established Over 2,200 gallons of water passed through the uterine cavity and as the continuation of an antiseptic solution for so long might have been injurious, only boiled water was used except at the termination when a pint of 1½ per cent. carbolic acid solution was substituted. The secretion for the first four

days was very abundant and composed of flake-like muco-pus, after that it was purulent. On the tenth day of the puerperium the patient was seized with a cough and pain in the right side so severe as to necessitate a hypodermic injection of morph. sulph. gr. $\frac{1}{4}$, and the following day consolidation revealed the presence of pneumonia.

Besides the above, three other cases may be reported more briefly, these are:

Case II.—Mrs. N., was confined on June 6th, 1886, by a midwife, and on the 12th she was seen for the first time by me when her condition was very grave: temperature 105°, pulse 145 to 150, irregular, abdomen painful and tender, tongue coated, and lochia fœtid. An intra-uterine douche of 1 to 6000 bichloride was given every three hours. The next day she had several chills and was delirious and very weak, so irrigation was started and kept up for 36 hours with four intermissions of one hour each. As the temperature had fallen to 100° and the patient was adverse to the method of treatment, an attempt was made to do without the water but always with the result of sending up the temperature. Six days of irrigation resulted in complete recovery.

Case III.—Mrs. D., confined on May 31st, 1893, for the sixth time had a natural labour except that the os was torn. On June 4th, at 5 p.m., the temperature was found to be 103°, and pulse 120. There was intense headache and several chills. The uterus was washed out seven times at intervals of three hours, but the following day all the symptoms were aggravated, the temperature reaching 104½° and pulse becoming very rapid and irregular. The same night continued irrigation was started, using from five to six gallons of water per hour with short intervals of suspension. In spite of this there was little decrease in the temperature so after 30 hours the amount was increased to ten gallons per hour. After eleven days of this treatment recovery was complete.

Case IV.—Mrs. C., was confined in one of the private hospitals in this city and on the seventh day removed to a private boarding house. On the 9th day I was called in and found the patient with a temperature of 104° and a very rapid pulse (about 140). She had had several chills. There was intense cephalgia, no milk in the breasts, and hardly any vaginal discharge. I had her at once removed to the Home Hospital and commenced treatment with intra-uterine douches of warm bichloride solution 1 to 6000 every three hours. The next morning curettage brought away a large quantity of detritus. The intra-uterine douches were then kept up for twelve hours but without producing much effect. On the 12th day after confinement, continued

irrigation at the rate of eight gallons of boiled water per hour was instituted, and in eight hours the temperature had fallen from 105° to 101°. During a rest of two hours it rose again to 103°. There was still much tympanites and the abdomen was painful and tender. Irrigation was resumed and kept up almost continually for three days when the temperature had reached normal. Extreme weakness in this case made it necessary to give ether and digitalis hypodermically on several occasions. On the 15th day, irrigation for two hours at a time every six hours was substituted for the continuous, and carried on for three days longer, and convalescence was permanently established on the 18th day. Recovery was complete.

Three other cases similar to these in every respect could be reported, but the ones already given will serve as examples of the whole. It was found that in every case it was necessary to keep up the irrigation until such a time as the uterine cavity had undergone repair to be sure that the improvement in the general condition had become permanent. In every one of the seven cases, recovery was complete, and, with two exceptions which were lost sight of, all became pregnant again. Is not this latter fact alone a sufficient argument against total hysterectomy in these cases, even supposing that equally good results would follow the surgical method of treatment?

A CASE OF FATAL STRYCHNINE POISONING—TRIAL—ACQUITTAL.

BY

D. W. Ross, M.D., Florenceville, N.B.

The case was that of Regina vs. Annie L. Canovan. Mrs. Annie L. Canovan was tried at the Carleton Circuit Court for the murder, by polsioning, of her sister, Minnie Tucker.

The evidence developed at the trial the following facts. For some months Mrs. Canovan had threatened her sister. She had on several occasions enquired the name of the poison used, and talked of its powerful nature. The accused had on Saturday purchased from a druggist one dram of strychnine sulphate to kill foxes. The following Tuesday evening her sister, Minnie, after a two weeks absence, returned to their common home. She was in good health and spirits and came into the house laughing. In fact she had snowshoed about four miles. The next morning the deceased prepared the breakfast. The meal was late. Shortly afterwards she commenced to wash clothing. While doing so she mixed some ginger tea and was seen to drink it. About half an hour after drinking it she sat down on a chair to rest.

While sitting thus she suddenly straightened out, upset the chair, and falling backwards struck her head against the side of the house with sufficient force to make a loud noise, and lay over the upset chair in convulsions. She was black in the face, frothed at the mouth, then she came to and recognized her father, spoke to him, drew him down to her and kissed him. She recovered her colour between the convulsions. While here she spoke to her mother, and told her sister that she was dying. She was then lifted by those present from the chair to the floor, where she lay on her right side. After being placed on the floor she recognised and spoke to those present. The speaking was always in the intervals. The convulsions were distinctly tetanic. She continued to have convulsions, increasing in intensity, for from fifteen to thirty minutes, when she died. While on the floor she drew her arms up, when in the convulsions, and one witness says she drew her feet up so that she looked "like a ball" "Drew herself up into a ball" is the way he expressed it. At no time, was there any *risus sardonicus* observed. It was established that rigor mortis did not succeed death immediately: but that it came on early. A coroner's inquest was held two days after death;

and a post-mortem ordered, which was made 72 hours after death. This examination was held by Drs. Ross, Welch, Cummins and Somerville.

A careful search was instituted to find some natural cause for such a sudden death. None was found. Outside of this negative result the post-mortem did not reveal much. The most that could be said from it alone was that death was most likely due to asphyxia.

Rigor mortis was found slightly in the arms, more marked in the legs and entirely absent in the muscles of the neck and jaw, and was judged to be passing off. The fingers were clenched, the tongue unbitten, and the lips livid. The membranes of the brain were found congested, the brain substance and ventricles normal and the cavities entirely empty. The abdomen was opened and inspected, and nothing unusual observed except an enlarged uterus.

In the thorax, the lungs were found engorged with dark, liquid blood. The heart was found entirely empty and uncontracted. It presented no evidence of disease.

The uterus was found to contain an unbroken fœtal sac containing a fœtus, that had reached the development corresponding to the third month. A small clot was found, at the lower part of the uterus, between the membranes and the uterine wall. There was also some separation of the fœtal sac, but it was thought to be only such as is usual at this early stage of development. The cervix was found undilated, and the internal os so strongly contracted that the little finger could not force an entrance and the whole cavity had to be laid open with a knife.

There were no punctures or wounds about the uterus or vagina. The kidneys were found to be normal in size and structure, so far as the naked eye could determine. They were highly congested, but, of course, some of this must have been due to hypostatic conjestion.

The urinary bladder was found empty and uncontracted.

The intestines were almost completely empty.

The stomach was ligatured *in situ*, removed, put into a glass jar and sealed. (The chemist to whom it was sent found that it contained three ounces of liquid contents.) It, with the kidneys, liver, heart and uterus were delivered to a chemist for analysis.

The blood was found throughout black and liquid. No clots were seen, except one in the uterus.

The result of the chemical analysis, although known by the law officers of the Crown, and by them communicated to the counsel for the defence, was not made known to the crown medical witnesses until after they had given their testimony.

In considering this case it must be remembered that the evidence as to the character and nature of the convulsions rests wholly on the evidence of untrained observers. Any one of the characteristic appearances may have been present, and not noticed by them. One of the witnesses, who showed plainly a tendency to shield the accused, changed materially her testimony as to the character of the convulsions from what she had sworn to before the magistrate and the coroner. The chemist, W. F. Best, of St. John, N.B., to whom the organs were submitted for analysis, gave his evidence right after that of the Crown medical witnesses. His report was that in one half of the stomach contents he found no strychnine, that in the other half of stomach contents and one-half the stomach he found .005 grammes of strychnine and no volatile or mineral poisons. In a small portion of the liver he found strychnine. In the rest of the organs, *i.e.*, liver, kidneys, heart, uterus, and one-half the stomach, after an analysis occupying 35 days, he found .03 grammes of a residue which he proved to be strychnine, by the color tests and by the melting and subliming tests. There was no brucine present, hence nux vomica could not have been administered. He used both Stass' and Dragendorff's methods to obtain the strychnine. On microscopical examination of the mucus membrane of the stomach he could not detect any crystals of strychnine.

As to ptomaines he considered that, while some of them might give a few of the color tests ; yet they could not stand the subliming process. This test he considered completely eliminated ptomaines. The substance after melting at the melting point of strychnine and subliming at its corresponding degree, gave the usual reactions of strychnine. He also tested the blood that had exuded from the organs and found no strychnine, but he thought this may have been because this process was hurried too much in order to report to the Crown law officers who were anxious to learn the results. We have here about positive proof that the dose had been all absorbed before death resulted.

The amount separated from the tissues equals about $\frac{1}{2}$ grain ; certainly a poisonous amount. No doubt had the brain, lungs and muscles being analysed a much larger amount would have been obtained. From the condition of the stomach and intestines absorption must have been fairly rapid, and yet some little time (30 minutes) elapsed before the onset of the symptoms. The form in which it was taken also was that of the sulphate, while the form isolated was the alkaloid itself. There is no doubt that a very much larger amount must have been taken, and the analysis proves that it was all absorbed

too. To our mind now there is certainly no doubt, since grs. ½ of strychnine was isolated from a few organs into which it had been absorbed, that the death was due to the fatal action of strychnine.

The effect of strychnine on the uterus might come up. If it had as powerful an effect upon it as upon the other muscles of the body, it is a wonder, considering the condition of the cervix, that the membranes were not ruptured, for, although at this early stage the ovum is usually expelled entire, yet it is difficult to understand how such could have resulted in this case if violent contractions had been set up. It seems to the writer that violent contractions would have easily ruptured the membranes, for they were undergoing physiological degeneration, and were very fragile, except where the placenta was developing. Especially would we expect such a result when the convulsions only lasted at most half an hour. The writer is under the impression that in this case, at least, strychnine had no effect whatever upon the muscular tissues of the uterus, and still the bladder was found entirely empty. One would suppose that the convulsions had emptied it. There are two cases reported where pregnant women took poisonous doses of strychnine and recovered. One of these aborted and the other did not.

To Summarize.—1. History and symptoms. A previously healthy adult, not subject to epilepsy, drinks some mixture and is suddenly seized with tetanic convulsions. There are intervals of relaxation during which she talks. Consciousness is certainly present in the intervals. Convulsions rapidly succeed each other, and rapidly proceed to a fatal termination in less than half an hour from the first seizure.

2. Post-mortem examination reveals no cerebral lesion, no cardiac or pulmonary disease, no rupture of internal organs or other cause for sudden death, and gave the general appearance of death due to asphyxia.

3. Chemical analysis proved positively the presence of strychnine in the coats of the stomach, and also absorbed into the liver and kidneys, grs. ½ strychnine being isolated.

From the above summary, when due weight is given to the three factors, the symptoms and previous history, the post-mortem appearances and the results of the chemical analysis, the fact of the death being solely due to the lethal action of strychnine is considered by us to be demonstrated.

The Crown had no evidence that the poison was administered by the accused, and the jury returned a verdict of acquittal.

A SIMPLE AND RAPID METHOD OF DETECTING TUBERCLE BACILLI IN FLUIDS.

BY

E. W. HAMMOND.

(From the Molson Pathological Laboratory, McGill University.)

Anyone who has attempted to detect tubercle bacilli in fluids, knows how wearisome and uncertain are the ordinary methods. Numerous suggestions have been made with regard to the shortening of the process of detection; some workers have employed caustic potash to dissolve out mucous and proteid materials, and have obtained fair results by decanting. Others again have employed the centrifugal machines and the hæmatocrit. In neither case do the results obtained appear to be so certain and the process so satisfactory as that here given.

Some authorities have used very complicated methods:

Ilkavitch[1] coagulates 20 ccm. of milk by dilute citric acid and dissolves the coagulum by phosphate of soda (saturated aqueous solution); then sulphuric ether and water are added, the mixture is shaken for 15 minutes, the solution is allowed to stand, and after the fat has separated the remainder of the liquid is taken and dilute acetic acid is added until the first sign of coagulation appears. It is then transferred to the centrifugal machine giving 3600 revolutions per minute and the deposit is conveyed to two slides and examined with oil immersion.

However, as a result of a series of studies in which at the suggestion of Dr. Adami, I tried various methods of separating the bacilli and gaining them from milk, I have eventually discarded one after another of the solvents of the various constituents of the milk, and have devised a method which appears to be at the same time accurate, cleanly and fairly rapid. The method is briefly as follows:

Taking milk to which preferably, in order to arrest the growth of other bacteria (which are apt to hide the tubercle bacilli), 5 per cent. of glacial carbolic acid has been added, I take 30 cc. 15 cc. in two tubes, and centrifugalise in Purdy's electrical centrifuge, or even preferably in the hand centrifuge of Bausch and Lomb or Queen, for the latter appears to give easily more rapid revolutions per minute. After centrifugalising for about 15 minutes, the supernatant fluid is poured off; the precipitated debris, which contains the bacilli, is then

[1] Munchen. Med. Wochenschr., 1892, p. 5.

treated while in the tube with about 3 cc. of a 5 per cent. caustic potash solution, is mixed up thoroughly by giving a good shake, and is left for two or three minutes. The tube is then filled up to the 15 cc. mark with distilled water and centrifugalised for about 20 minutes. If now the supernatant fluid be taken off, the minute quantity of the debris at the base of the tube can be examined at once, or if the material be required in a still purer condition completely free from caustic potash, a series of dilutions and centrifugalisations with distilled water can be carried on.

By this method a film can be made upon a slide or coverslip which is free from fat and proteid granules, and which contains only the bacteria present together with any solid debris which may be in the milk or other fluid. To get rid of this foreign matter, if present in any large amount, one may safely filter the fluid at the beginning of the process through the finest gauze. It is wholly unnecessary, I find, to treat milk with sulphuric ether in order to separate off fats, the caustic potash being useful to remove both fats and proteids from the deposit after the first centrifugalisation in a way that is completely satisfactory.

I have employed this method and have been able to detect bacilli in the milk in which they were present in such small numbers that Dr. Martin, inoculating 15 to 35 cc. of the same milk into a series of over 50 guinea pigs and rabbits, has only once obtained a development of tuberculosis, and I will go so far as to say that this fact indicates that the method affords a more sure diagnosis of the presence of bacilli in milk than does inoculation. It may be added that using this same milk I have concentrated down 70 cc. using distilled water alone and have inoculated the deposit into a rabbit which now after 14 days is showing definite emaciation and indications of the progress of tuberculosis.

It is scarcely necessary to add that this same simple method can be most satisfactorily employed for the detection of tubercle bacilli in other animal fluids; it gives excellent results for example, with sputum from suspected cases of tuberculosis, and although as yet I have had no undoubted example of tuberculous urine, I have found that it gives a very clear precipitate of bacteria in urines containing a large amount of mucus and pus.

A NOTE ON CONCURRENT CARCINOMA AND TUBERCULOSIS.

BY

W. F. Hamilton, M.D.,

Demonstrator in Clinical Medicine, McGill University; Assistant Physician, Royal Victoria Hospital.

Two causes contribute to render this subject of interest to clinicians.

The first is the theory of the intimate pathological relationship of these two diseases now long since disproven, and the second is the strong authoritative teaching of Rokitansky that these diseases were antagonistic and very rarely, if ever, found progressive in the same subject.

That tubercle and cancer were regarded in some way related is shown from articles written in 1859 and 1868, in which such questions as the following are asked :

1. Is there anything in the fundamental structure of tubercle that shows affiliation with cancer ?

2. Is there any similarity in their manner of development ?

3. Is there any evidence that the tubercular taint can produce cancer ?

The first and second questions are long since answered by microscopic observations upon the structure of these growths or deposits, while the third is so vague that more definition of the term " tubercular taint" is yet needed.

The second cause of interest in the subject, as we have seen, arises from the statement of Rokitansky. In his manual on Pathological Anatomy, he says, " An antagonism prevails between tubercle and carcinoma. Whenever their general correlation is susceptible of proof, cancer has succeeded to tuberculosis"

The following case, which may be summarized briefly, is one among many which narrow somewhat the broad generalization of this authority.

The patient was a stonemason, aged 42 years, who was the subject of ascites, weakness, vomiting, progressive emaciation, and slight œdema of the lower extremities. He had suffered from pleurisy of the right side at the age of 23 years. He was an habitual and a hard drinker, and had contracted both gonorrhœa and syphilis. His family history was negative, concerning tuberculosis and cancer.

He gave up his work in November, 1896. He died in May, 1897.

The clinical diagnosis was cirrhosis of the liver, of the atrophic variety, with tuberculosis of the peritoneum and lungs.

The autopsy showed no cirrhosis of the liver. The peritoneum, the retroperitoneal glands, the right lung at its apex and the right pleura were involved in a tuberculous process. At some parts the tuberculous process was recent and advancing.

The stomach walls and lower part of the œsophagus, to the length of 6 cm., were invaded and infiltrated with carcinoma. It was a diffuse infiltrating carcinoma of the stomach.

The pathological reports of the Royal Victoria Hospital up to date show three other cases of concurrent cancer and tuberculosis. The following brief details may be of interest :

Case I. (68, 1896)—Male, aged 76. Carcinoma of the tongue ; bilateral lobar pneumonia ; chronic interstitial nephritis ; obsolescent left pulmonary tuberculosis ; rheumatoid arthritis.

Case II. (83, 1896.)—Male, aged 85. Primary carcinoma of the urinary bladder ; secondary carcinoma of the prostate and urethra ; chronic interstitial nephritis ; indurative right pneumonia with progressive apical tuberculosis ; left apical obsolescent tuberculosis.

Case III. (47, 1897.)—Female, aged 59. Adenocarcinoma of the œsophagus ; stricture (gastric operation case) ; obsolescent tuberculosis of the right apex, caseous peribronchial glands ; chronic indurative pneumonia.

Case IV. The case already given in detail above.

Drs. Pepper and Edsall, of Philadelphia, have recently written upon this subject, and the statistics quoted by them from Lubarsch and others, while showing a degree of exclusiveness between the two diatheses, do not show them to be so antagonistic as Rokitansky's teaching would lead one to believe.

Hospital Reports.

TOTAL EXTIRPATION OF PENIS FOR EPITHELIOMA, TWO CASES.[1]

BY

J. Alex. Hutchison. M.D.,

Surgeon to the Montreal General Hospital.

Case I. J. B., aged 62 years, was admitted to the Montreal General Hospital on August 13th, 1897. In the previous April he complained of pain in the penis and called in aid to relieve bleeding. Later I was asked to see him and found a congenital phimosis, which on opening up presented the characteristic epitheliomatous growth. Operation was advised, but delayed until a very severe hæmorrhage took place.

Family History.—A brother and cousin died of cancer of the throat, otherwise negative.

Operation on August 5th, 1897. I did a Pearce Gould's operation bringing the urethra out in the perineal space, and retaining some of the fibres of muscle over the flesh. As the inguinal glands were enlarged, I removed them on both sides.

Dr. Wyatt Johnston's pathological report says they are diseased.

Patient made a good recovery, and was discharged September 9th. To-day he is in good health, has gained about fourteen pounds, has complete control of the bladder. No sign of recurrence.

Notes from case report of Dr. F. R. Wainwright, House Surgeon.

Case II. W. B., aged 37, was admitted to Montreal General Hospital, March 24th, 1898.

He had always been a strong healthy man. Eleven years ago he had chancroids and gonorrhœa, and he has used tobacco and alcohol to excess.

In May, 1897, he was treated in the Out-door Department. Diagnosis chancroids, inguinal adenitis and phagedenic ulceration. On May, 22nd, under ether, I curetted the diseased tissue, thoroughly cauterizing the stump with acid nitrate of mercury. He was shortly after discharged to be dressed in the Out-door Department, and was again admitted, as stated above, with well developed epithelioma.

Operation March 28th, 1898. I did a Pearce Gould amputation in addition to double castration and removal of enlarged inguinal glands on both sides. The removal of the glands occupied a long time,

[1] Read before the Montreal Medico-Chirurgical Society, June 6, 1896.

requiring extensive dissection on the right side well down the thigh. The castration was done as the result of the experience of my first case, the scrotum being in the way, interfering, with micturition. The operation occupied a long time. Some saving was made by simultaneous excision of glands, Dr. Elder kindly taking one side. Some superficial infection took place, but on the whole the patient made a good recovery, and was discharged April 31st. To-day he is working regularly and in good health. He has complete control of the bladder.

Dr. Johnston reports that the glands removed were not infected with the disease.

Notes from case report of Dr. C. C. Gurd, House Surgeon.

Case Reports.

CASE OF OVARIAN DERMOID WITH A TWISTED PEDICLE.[1]

BY

F. A. L. Lockhart, M.D.

I am indebted to Dr. F. G. Finley for the patient from whom this specimen was removed and whose history is as follows :

Miss S., aged 22 years, when first seen complained of intense pain in the lower abdominal zone.

She first menstruated at the age of twelve, and has always been quite regular every four weeks, the flow being profuse but painless. From the onset of puberty, however, she has had attacks of pain at intervals in the left side of the pelvis, but these attacks have had no relation to her menstrual periods. She was last unwell on April 14th nothing abnormal being noticed. Dr. Finley saw the patient during one of the above mentioned attacks and there was no sign of any abdominal swelling at that time. She had a severe fall on the back when she was a child of nine, but had otherwise been quite healthy except for two cysts which appeared ; one in the lobe of one ear, this suppurating and thus becoming cured, and a second one in front of the throat to the left of the thyroid cartilage. This latter cyst appeared in infancy and used to become inflamed if she caught cold, but has gradually disappeared, leaving quite a noticeable umbilicated cicatrix. It would be interesting to know whether or not these were dermoids.

On Wednesday (May 11th) the patient had pain in her abdomen and back but was able to go about her usual occupation. On the 12th, the pain had increased to such an extent that she was compelled to remain in bed, and it had extended from the left side, where it had started, across the hypogastrium to the opposite side. That evening, she took what her friends called "a turn." She first felt intense pain in the hypogastrium while sitting at work, this being followed by the limbs and whole body becoming rigid. On Friday, the lower abdomen was noticed to be enlarging and becoming hard.

I first saw her on Saturday, when she was having great pain in the lower abdomen, but was partly under the influence of morphia. Her temperature was 100.8° F., pulse 108 and weak, and her respirations were 28 per minute.

[1] Read before the Montreal Medico-Chirurgical Society, June 6, 1896.

On examining the abdomen, a large, smooth, rounded swelling was seen to be occupying the hypogastric and lower half of the umbilical regions and to be encroaching slightly upon each iliac region. The tumour was somewhat tender on pressure and felt very similar to the enlarged fundus uteri. The abdomen was hard and board-like all around the mass. A vaginal examination revealed a firm cervix with small os, and a small firm mass, which was made out to be the retroverted fundus, lying posteriorly. In front of the latter and separated from it by a well-marked sulcus was the above mentioned mass which seemed to be closely connected with the front of the uterus and which was but very slightly moveable. Examination under ether threw no further light upon the case. On passing a male silver catheter, so as to exclude the possibility of the swelling being a distended bladder, a little non-albuminous urine was drawn off. As the patient was not in a dangerous condition, it was decided to keep her closely under observation.

I again saw the patient with Drs. Shepherd and Finley at 11 p.m., on Sunday, when she was distinctly worse. For several hours the patient had been vomiting the black fluid so often seen in toxæmic conditions. The temperature had dropped nearly two degrees, viz., to 100° F., since morning, while the pulse rate had increased to 126 beats per minute, these signs pointing to internal hæmorrhage. The mass had increased in size until it reached about half an inch above the umbilicus and to the right side, so that it was decided to operate at once and the patient was conveyed to my private hospital.

After careful preparation of the abdomen, the usual incision for ovariotomy was made, a dark congested mass being exposed to view. This was made out to be a tumour connected with the left appendages and with the pedicle tightly twisted three times, so that it only measured 10 cm., in circumference. As the tumour was evidently cystic and could not be brought out of the abdomen intact without greatly enlarging the incision, it was incised, and about two litres of a creamy fluid escaped. The sac was then quite easily drawn out through the abdominal incision and the pedicle was ligated and divided. After the abdomen had been well flushed out with a saline solution, the wound was closed with three layers of sutures as usual, and the patient was given a saline enema and $\frac{1}{30}$ gr. of strychnine hypodermically. Post-operative pulse was 112, temperature $99\frac{4}{5}$° F., and respiration was 24.

Since the operation, her highest pulse-rate was 120 and that was on the night after the operation, when the temperature and respiration also rose to $100\frac{1}{2}$° F., and 32 respectively. Just after the opera-

tion, she complained of cramp-like pains in her arms and legs at times.

At 12.30 on the day after operation, she took a weak turn which lasted for 12 minutes. This began by a cramp-like pain in the abdomen, the left side of the face twitched and the fingers kept working, she became unconscious and the eyes were fixed, the pupils being very dilated. The pulse was rather weak and increased to 120. She was given two drachms of whisky hypodermically and heat was applied to the cardiac region. After coming to, she complained of a burning sensation in the abdomen. The urine was carefully examined and found to be perfectly normal. She had four similar attacks during the next 48 hours. Although very alarming at first, there is but little doubt that these attacks were hysterical, as the patient is somewhat neurotic, and when the second attack was just beginning, the nurse sent for me and it was noticed that she was comparatively quiet until she saw that both the nurse and I were watching her attentively. This was the only attack which I saw from beginning to end, and the pulse did not weaken to any appreciable extent, although it became somewhat rapid.

Description of Tumour.—The mass was originally the size of an adult head. It has been preserved in Torre's fluid and you can see how very dark and congested the surface is. The left tube, which was removed with the tumour is considerably thickened and congested, as is also the corresponding portion of the broad ligament, and you can see the twist of the pedicle where it was divided. On opening the cyst, it is seen to be multilocular, some of the loculi containing light coloured hair (the patient's hair is red) together with the cheesy material seen in dermoids, and others contained extravasated blood. In the largest loculus were two small spicules of bone at the base of a pyriform mass composed of blood which had extravasated into the cyst wall.

It was three weeks last night since the patient was operated on and she has made a very good recovery. She sat up in bed to-day, and will probably go home next Saturday, four weeks all but one day from the date of the operation.

In conclusion, I must thank Drs. Finley and Shepherd for kindly assisting me with the case.

OBITER SCRIPTA IV.

(Casual notes from the Medical Clinic of the Royal Victoria Hospital.)

BY

C. F. MARTIN, B.A., M.D., ETC.,

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AND

HARVEY SMITH, M.D.,

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SOME ATYPICAL FORMS OF PNEUMONIA.

Year after year, diseases which are epidemic present variations not only in the individual cases but likewise in the disease as a class, and it is by no means easy to detect the reasons for these general departures from the usual types Five or six years ago, for example, it was a common experience to find in the epidemics of typhoid fever, that diarrhœa was one of the most constant of the earlier symptoms, while on the other hand, more recently constipation has been present in probably 90 per cent. of the cases. In many of the epidemics too, in present years, the vast majority of the cases have been of the mildest type, while previously even with very much similar treatment, the number of fatalities was certainly greater.

So far as the incidence of pneumonia is concerned, the epidemics of influenza have had an undoubted influence on the statistics of the disease, as has already been noted by several authors. Rankin of Glasgow, for example, described some three years ago a series of cases following influenza where the features were distinctly unusual, there being a very insidious onset without rigor, pain or cough, and where nausea and gastro-intestinal symptoms were the prominent conditions. In these cases too, the temperature was markedly irregular and the pulse slow. Rendu, of Paris, and Gmeiner, have noted somewhat similar facts though in less detail, referring more especially to the gradual onset, the irregular temperature, and the termination by lysis rather than by crisis.

During the past season, it has been our experience at the Royal Victoria Hospital in meeting with an unusual number of cases of pneumonia, to find comparatively few typical so-called text-book types. Only two or three at the most, out of fifteen or twenty cases, have presented a frank pneumonia where the temperature has run

from five to ten days a high continued course followed by a crisis In many of the cases indeed, the onset has been most insidious, the initial symptoms continuing over several days, and being those rather of a mild form of influenza with slight malaise and perhaps chilliness, headache and gastro-intestinal symptoms, all of which are superseded after some days by the initial pleural pains of pneumonia. In several of the cases too, the gastric symptoms were so marked as to completely mask in the earlier stages, the true nature of the disease.

One case is peculiarly interesting as showing precisely the reverse of this mode of onset, the patient presenting the initial rigor within 12 hours of the time of exposure, his condition previously being that of perfect health. True rigors at the onset of the disease have been comparatively few, *i. e.*, in less than one-third of all the cases. So far as the children are concerned of which there have been 7 ill with pneumonia, the onset was likewise gradual and was in no instance demonstrated by convulsions which under ordinary conditions is apparently fairly common.

So insidious has the onset been in certain cases that it has only been through the ordinary routine examination of the lungs that the signs of consolidation were manifested, as in the case of one child who entered the hospital because of some pain in the neck, while in another instance, a child who was originally brought to the Outdoor Department on account of general malaise, was found to have the apex of one lung consolidated without there being any other subjective or objective signs of the affection. This same child who had for some five weeks a markedly high temperature accompanying the pneumonic process, was never at any time in any obvious distress, and insisted throughout the course of his malady on sitting up in bed.

Histories such as the following have been quite common in the present epidemic. The patient entered the hospital complaining that early in the malady for six days he had had coryza, neuralgic pains in the legs and sore throat followed by nausea and occasional vomiting. At no time did he have any chill. One week later, pain in the side developed and the patient, though endeavouring to keep on with his employment, was obliged to take to his bed, and a few days later came to the hospital, one lung being found in a state of partial consolidation. During the next week that he was under observation there, his temperature assumed a distinct intermittent type as the chart will show, (Chart No. I) and although a complicating pleurisy with effusion was suspected on account of this irregularity in the fever we were never at any time able to obtain proof of its presence.

This question of temperature has been throughout the series of

cases one of the most interesting features. In two patients where the ordinary basal consolidation was present without complications, the temperature assumed a markedly intermittent type for at least one week. Pseudo-crises have been the rule rather than the exception, there being often several in the same patient. Remittent temperatures and termination of the fever by lysis has likewise been among the commoner manifestations as will be seen from the accompanying chart No. II.

One of the patients in whom this was manifest was a young married woman in whose family during the same week there had already been two other cases of the same disease. Five days after the initial rigor, she took the cars for some distance towards the hospital and then walked a quarter of a mile in order to gain admission. She was practically moribund on being placed in bed and the heart itself was showing signs of failure, the second pulmonary sound being distinctly weakened. However, the condition fortunately subsided, and though no complications could be detected, the temperature ended in much the same manner as do ordinary cases of enteric fever.

Among other interesting features which have been noticed in the present epidemic has been the insidious manner in which pleurisy with effusion may complicate the disease, and in several cases where the temperature was either on the descent, or had already attained normal, fluid either serous or sero-purulent had collected without manifesting any appreciable alterations in the temperature. In one case indeed, the fluid collected within 24 hours, filling half the chest without there being any evidence to indicate it on the chart. Aspiration of this patient's pleural cavity, showed the presence of sero-pus which disappeared without further operation.

That pus may be present in the pleural cavity without appreciable chart alterations is of course a well recognised fact, but to have it completely fill the pleural cavity as in another instance, where the pulse, temperature and respirations were normal, is certainly among the very atypical forms of disease. In yet another of our cases delirium tremens was present and the pneumonia occupied but a very secondary part of the symptomatology. It is perhaps less uncommon to find in patients with delirium tremens a great elevation of temperature, and the condition may go on insidiously though much of the lung be involved.

Such was the condition in our case referred to where, though there was but slight rise of temperature, the rusty sputum and evidences of consolidation in a portion of one lung, were quite sufficient to make the diagnosis of pneumonia undoubted.

Examination of the blood showed that in most of the cases, leucocytosis was present, and it has been our experience to find that in the non-fatal cases, a good prognosis is certainly associated with its presence. To this, however, we have perhaps a slight exception, in a young child whose condition was so severe as to be considered practically beyond hope, and only 8000 leucocytes were present. The disease became bilateral, the pulse reached 175 per minute, and the respirations 72; for a time likewise there was Cheyne-Stokes respiration. A few days ago, however, a crisis appeared and the patient is now convalescing. It should be stated, however, that the day after the crisis the leucocytes reached 16,000 to the cubic millimetre. The most marked leucocytosis present in any case was 44,000 to the c.mm.

Delayed resolution had not been uncommon, the signs of consolidation persisting often for many days after a crisis would have been expected. In two instances occurring some months ago, delayed resolution was of such a nature as to arouse the suspicion of a tuberculous pneumonia although the temperature had attained the normal for some days. Tuberculin was injected without a definite reaction, and a correspondingly good prognosis was given to the friends, a proceeding which was finally found to be quite justifiable, the patients both ultimately making a good recovery.

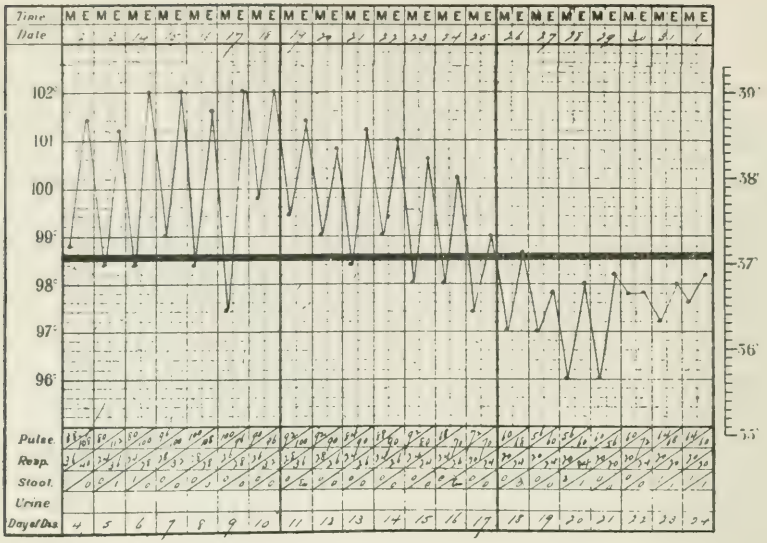

CHART I.

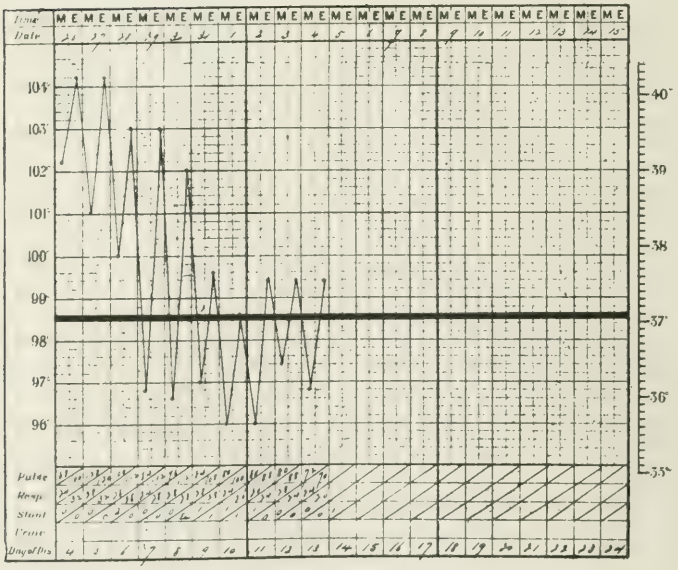

CHART II.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Liver Cirrhosis.

ALEXANDER JAMES, M.D. "Liver cirrhosis and its varieties."—*The Scottish Medical and Surgical Journal*, June, 1898.

Dr. James states that he believes there is a unity between the pathological processes seen in acute yellow atrophy of the liver and primary cancer of the liver, and the middle link is liver cirrhosis.

He then defines the two main forms of cirrhosis of the liver, the large, hypertrophic, biliary cirrhosis and the small atrophic, portal cirrhosis. Thereafter the first point to which he draws the reader's attention is the *transition* forms between the hypertrophic and atrophic cirrhosis.

He declares that these are extremely common, and in presenting cases illustrating this transition, he says that "they are a few collected out of many, and they have been specially selected to illustrate variations in the periods of time required for this transition."

Five such cases are detailed in which the symptoms and physical signs of portal cirrhosis supervened upon the original symptoms and physical signs of bilary cirrhosis. In cases of children transitional forms are the rule. The time of the transition varied considerably.

The next variety discussed is that variety of cirrhotic changes in the liver, secondary to gastric fibrosis, illustrated by two cases. In the first, observed by James, a gastric ulcer caused adhesion to the liver and a growth of fibrous tissue along Glisson's capsule. The second is quoted from Frerich's "Diseases of the Liver," in which the fibrosis spread from a gastric ulcer and involved the portal vein. Then a third variety, illustrated by three reports, embraces those cases suggesting tumour of the liver. They were of chronic type and developed signs of cirrhosis.

Rheumatic Affections of the Heart.

JOHN F. H. BROADBENT, M.D. "Rheumatic affections of the heart in childhood and early adolescence."—*The Edinburgh Medical Journal*, May, 1898.

In this article, Dr. Broadbent emphasizes the following points :

1. Articular manifestation of rheumatism in childhood are slight. The cardiac structures rarely escape.

2. As danger signals in suspected cases of rheumatism in children, rheumatic nodules, exudative erythemata and chorea are to be watched for.

3. Salicylates are not so effectual in rheumatism of childhood as in adult life.

General and Local Bloodletting in Children.

ADOLF BAGINSKY. "Ueber allegemeine und örtliche Blutenziehungen in der Kinderheilkunde."—*Berliner Klinische Wochenschrift*, No. 21, 1898.

Dr. Baginsky reviews briefly the history of the practice of bloodletting in diseases of children from 1835 to the present time, quoting Jacobi's opinion and strong recommendation against the operation as recorded in 1870.

Before directing the attention of the members of the Berlin Medical Society to the question proper, he deprecated the practice of bloodletting in children, when the only purpose in view was experimental, *e.g.*, cases in which either during the progress of illness or in convalescence it is desired to withdraw the blood for examination for bacteria or antitoxins.

The main questions of Dr. Baginsky's paper are whether there are cases in which bloodletting in children is urgently indicated, and if so of what class are these cases. The question first presented is answered in the affirmative, and three reports of cases so treated are given—thus in part answering the second question. The three cases occurred in children from 7 to 9 years of age. They were cases of pneumonia, pneumonia with heart disease, and cirrhosis of the lungs with bronchiectasis, All presented the most distressing cardiac symptoms, manifest in cyanosis and suffocative signs. Prompt relief followed the bloodletting. In two cases the blood was taken from the veins ; in one the radial artery was cut. From 80 to 120 c.cm. of blood was withdrawn.

The second question, as to the class of cases, is further answered in Dr. Baginsky's paper by his reference to simple eclampsia and uræmic eclampsia. In such cases, however, local bloodletting is the practice and is done chiefly by means of leeches or by cupping.

In closing his remarks upon the subject, he briefly summarizes them in the following words:

"I hold venesection allowable and urgently indicated whenever, by mechanical pressure in the circulation, paralysis of the over-filled heart is threatened. For local bloodletting I take as indications eclampsia, the simple as well as the uræmic form, likewise any mechanical hindrance to the circulation within the skull. When the circulation in the brain is so great that the customary remedies, as warm baths with cold douches, chloroform, chloral, etc., fail to relieve them, I believe it is indicated and plainly *demanded* that local bloodletting should be done." *W. F. Hamilton.*

The Presence of the Organism of Cerebro-spinal Fever in Healthy People.

Dr. Arthur Schiff (Vienna). "Über das Vorkommen des Meningococcus Intracellularis in der Nasenhöhle Nicht-Meningitis-Kranker Individuen."—*Ctblt. f. Innere Medicin*, 4 Juni, 1898.

To the clinician bacteriology is often the cause of what seems verily a reasonable indignation; while no department has opened up a vaster field for him, it has likewise offered an equally great series of conundrums. A micro-organism is discovered and approved of as a specific germ of a disease, and not long afterwards its presence requires explanation in tissues or situations where no abnormality whatever exists. There is no more prominent example of this in modern times than the conditions under which the bacillus of diphtheria is found, where both clinician and expert are often, and very often, placed in a quandary to decide upon an absolute diagnosis, more especially in the face of all that is learnt and written concerning the pseudo-diphtheria bacilli and analogous forms, streptococcus membranes, etc. And while of course the ordinary cases are easy enough of diagnosis, there are nevertheless instances whose number are legion, where the expert can only conscientiously recommend a practitioner to "be on the safe side and treat the case as one of diphtheria." Such instances are happily becoming fewer of late years, and by means of inoculations and controls we are in a better position to obtain a satisfactory clue to obscure cases.

The gonococcus has time and again offered similar difficulties, more especially in connection with its presence in the female genital tracts, and in spite of all that has been done and written on the subject, we are still scarcely in a position to give what we might call a medico-legal opinion with absolute certainty in every instance. Happily

there is less likelihood of our falling into error with that most important of all bacilli, the micro-organism of tuberculosis, though even here one observer insists that he can obtain from milk a germ whose micro-chemical reaction is in every way identical with that of the tubercle bacillus. Such a statement, however, in the light of our present knowledge, sounds very much like begging the question, and so far as we are aware, that authority is scarcely in a position to prove his contention.

It has fallen to the lot of Dr. Schiff, working in Schroetter's Clinic in Vienna, to make some interesting observations in connection with the specific organism of epidemic cerebro-spinal meningitis. Since the discovery of that germ by Weichselbaum in 1887, much interesting work has been done in connection with the disease, and not the least in importance is the application of Quincke's device for puncturing the spinal canal as a means of diagnosis, a method which, both for tuberculous and epidemic meningitis, has proved of great value.

It has been more recently contended, however, that other means of diagnosis, much more simple, could be brought into effect. Strümpell, Weigert and others, had frequently observed the association of nasal catarrh with the epidemic form of this disease, both as a clinical symptom and in post-mortem findings ; and it was left for Weichselbaum to discover his germ in the nasal tract as well as on the meninges, a fact from which he deduced the theory that infection took place primarily from the nasal mucous membranes through the ethmoid sieve, and so to the brain and cord. Certainly in subsequent cases the germ was abundantly present in those regions, and so great a hold did the theory gain, that treatment was partly based upon it, and one of the great prophylactic measures was the thorough disinfection of handkerchiefs employed by the victims of this disease. Dr. Schiff having met with a case where differential diagnosis between the various forms of meningitis was somewhat obscure, he examined the nasal secretion and found the meningococcus abundantly. The fluid removed by puncture from the spinal canal, however, was quite clear and revealed to his surprise the bacillus of tuberculosis, while the autopsy too verified this latter discovery and showed an ordinary typical tuberculous meningitis.

Starting from this discovery he examined the nasal secretion of 27 individuals, people who were suffering from indifferent slight ailments, and found among these seven where the meningococcus was present and pure cultures were obtained in three instances. From this surprising fact, there are two main deductions: firstly, that there is

no clinical value whatever to be attached to the examination of the nasal secretion in suspected cases of meningitis, and secondly, it renders the theory still more probable that infection in epidemic cases does indeed occur through the cribriform plate of the ethmoid bone. Where the condition and soil are favourable, the organism may become virulent and set up the disease, while otherwise, it will remain innocuous very much in the same way as the pneumococcus, being present, may or may not be associated with inflammatory conditions in the lung.

C. F. Martin.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Tumours of the Liver.

MM. Tessier et Auvray. "Les tumeurs du foie au point de vue Chirurgical étude sur la resection du foie."—*Revue de Chirurgie*, 10 mai 1898.

The surgical history of hepatic tumours, and consequently of resection of the liver, is of recent date. Lins was the first, in 1886, to remove a solid tumour from the liver. Since then not only tumours, but floating lobes and hydatid cysts have been resected. The subject has been studied experimentally on the lower animals by Glück, Tizzoni, Griffini, Podvisatzky, Pondfick, Meister and others. In 1892 Keen published a very interesting account of this work in the *Boston Medical and Surgical Journal*, and in 1896 the Russian authors Kousnetzoff and Pensky published their personal experience in the *Revue de Chirurgie*. Several others have also written on the subject.

The following varieties of tumours are found in the liver: Syphilitic, cancerous, tuberculous, angiomatous, lymphatic and biliary cysts. Syphilitic gummata are found in hereditary, and in the late tertiary stage of acquired syphilis. They vary in size from a pea to a large nut. They are generally rounded, but sometimes irregular in form. They can be isolated, are firm, of a greyish or pale yellow colour, and surrounded by a fibrous tissue layer, from which they cannot be enuncleated. They generally co-exist with a condition of hepatic cirrhosis, and adhesions of the liver to the diaphragm or to the neighbouring viscera.

In cancer, only cases of primary cancer of the liver have any surgical interest, and of these only those, unfortunately rare, of one or two nodules. Cancer, secondary to disease elsewhere, could hardly be considered from an operative point of view.

Adenomata are not always easy to distinguish from cancer at the operating table. They sometimes become encysted, and they are not umbilicated. Another characteristic is that they tend to attain considerable size and to become pedunculated.

Like cancer, sarcoma of the liver is of interest to the surgeon only when primary. It is nodular and grows to a very large size.

Langenbuch removed one weighing 370 grammes, and the weight of Issail's case was 1225 grammes. It was attached to the right lobe by a base 15 centimetres in diameter. In the patient of Sklifassowsky the sarcoma was the size of a "man's head" and presented large vessels at its base.

Myxo-fibromata have been observed in the liver.

Tuberculosis of the liver has, as a rule, but little of interest to the surgeon. A large tuberculous nodule might exceptionally be dealt with, or a tubercular cavity be might opened and drained.

Angiomata occur as a congenital condition, which sometimes occupies the whole of a table and may develop to an enormous size; and acquired angiomata observed chiefly in old men.

Lymphadenoma have been observed. Biliary cysts, non-parasitic, have been removed. König reported a case of an enormous cyst, holding three litres of a brown liquid, containing cholesterine.

Symptoms and Diagnosis.—The diagnosis of these tumours, so very important, is extremely difficult, as indicated by the number of errors made. Yet a careful observation of physical signs and disturbance of function will often enable one to form a pretty correct idea of the condition present. An opinion must be formed from the co-existence of many signs. In a general way it may be said that the symptoms increase as the tumour develops. If malignant, the general condition of the patient becomes altered rapidly enough, as is the case in malignant disease elsewhere. The appetite fails, the digestion becomes impaired, vomiting and constipation ensue. More or less pain is felt, particularly in the right hypochondrium, the respiratory movements are embarrassed, active exercise soon becomes difficult or impossible, and icterus occurs when the bile-ducts are pressed upon.

The increase in the size of the abdomen occurs chiefly in the upper part and to the right.

By inspection the tumour can often be seen moving up and down with the rise and fall of the diaphragm, and by palpation the consistence can frequently be determined, and sometimes the connection between the tumour and the liver can be grasped. Occasionally a small degree of lateral motion can be obtained.

When all these signs exist, the diagnosis of a tumour of the liver may be considered fairly certain, but the absence of any one, may lead to error. Occasionally a tympanitic note can be obtained between the upper border of the tumour and the liver.

Tumours of the liver have been mistaken for uterine fibroid, for tumour of the mesentery and of the pancreas, for ovarian cysts, and in one instance for an aneurysm of the abdominal aorta.

A point worth remembering is that a cancerous mass in the liver may break down and cause fever and hecti. Routier reported a case in which he opened what he took to be a suppurating hydatid cyst, and only at the autopsy did he find out that he had been dealing with a cancerous mass in the liver.

Treatment.—1. What are the indications for surgical interference in tumours of the liver ?

2. By what different methods can we proceed, and which of these possess the greatest merit ?

The cases suitable for surgical interference are rare. The methods of operating adopted up to the present time must be regarded as tentative.

A tumour of the liver to be removable, must be unique ; it must be accessible, preferably in the left lobe. An Italian surgeon, Tricomi, has removed the whole of the left lobe of the liver. To obtain access he resected the xyphoid cartilages, divided the rectus muscle and the triangular ligament.

Tumours situated deeply in the substance of the liver are seldom removable. A pedunculated tumour, particularly if growing from the lower surface of the liver would be more easily removed. Absence of adhesions would be another favourable condition.

In some instances these operations are curative, and in others only paliative, as in the removal of a tumour pressing on nerve trunks, or on the bile-ducts, or on the intestine.

The incision must vary to suit the requirements of each case, at one time central, at another lateral, and again along the costal border, or an oblique and a vertical incision also. Access must be good, and as much of the liver as possible made to approach the opening in the abdominal wall.

In the ablation of the tumour very simple measures have thus far been employed. Jacobs used the thermo-cautery ; Bruns divided the pedicle with a bistoury, and then touched it with a thermo-cautery ; Mikulicz and Schmidt curetted a gumma and packed the cavity with iodoform gauze ; Eiselaberg removed an angioma with a cautery and ligature. It is found that the vessels in the substance of the liver may be caught with hæmostatic forceps and ligatured without difficulty. Kousnetzoff and Pensky found that the vessels in the liver required to rupture them a weight of from 750 to 850 gr., according to their calibre. Some operators have attached the pedicle to the abdominal incision.

(To be continued.)

Varicocele.

SENN. "On the frequency of varicocele and the limitation of operative treatment for this affection.—*The Philadelphia Medical Journal*, June 18, 1898.

Dr. Senn has recently had an exceptional opportunity of determining the frequency of varicocele. As a member of the Examining Board, he has, at Camp Tannar, Springfield, Ill., inspected 9,815 recruits for the volunteer service, and in doing so took special pains to investigate varicocele as a cause of disability. The disease was found more frequent in the robust strong, than in men of slight build. In most instances the men were otherwise in excellent condition. Atrophy of the testicle was seldom noted. The men with large varicocele were questioned as to whether the condition caused pain or discomfort, and, with the exception of 3 or 4 cases, the replies were negative. In more than half of the cases that presented, the men were ignorant of the existence of the affection. The whole number of recruits examined was 9,815, and 2,078 were affected with varicocele or 21.17 per cent. The condition was bilateral in 17 cases. In 15 cases the right side only was affected, and in all of these the varicosity was slight or moderate. Dr. Senn concludes that operation is seldom called for, and that varicocele is very seldom a cause of disability for military service.

One point it would, perhaps, be well to bear in mind, and that is, that these men were volunteer recruits and presumably anxious to be accepted.

Geo. E. Armstrong.

Gynæcology.

Uterine Fibroids and Conservative Surgery.

KRUSEN, W., M.D, "Conservative surgical treatment of uterine fibroids.—*Amer. Gyn. and Obstet. Journal*, April, 1898.

Following the example of A. Martin, of Berlin, the writer has given myomectomy a trial, and reports a series of six successful cases. The number of the tumours varied from one to thirteen in any individual case, but the sizes are not mentioned, except in the case of the patient from whom thirteen were removed, where he says that "thirteen growths, varying in size from a pea to a walnut, were removed." The seat of growth varied, some being submucous and others interstitial and others again being subserous. A few were pedunculated.

In preparing the patient for operation, the vagina should be very thoroughly sterilized, and the first step in the operation itself is to carefully curette the uterine cavity and wash it out with an antiseptic solution, as it may be required to be opened into during the removal of the growths. If, on opening the abdomen, the appendages are found to be diseased or the tumour is fibro-cystic or œdematous, supra-vaginal hysterectomy is the operation to be selected. In myomectomy, an incision should be made through the covering down to the tumour, which may then be seized with forceps and enucleated by either the finger or Allis' dissector. Hæmorrhage may be controlled temporarily by passing an elastic ligature around the neck of the uterus or by compressing the vessels digitally. After the tumours have been removed, it is advisable to ligate each bleeding point separately, and then bring the opposing surfaces of muscle together by rows of buried catgut sutures so as to leave no space in which blood might collect. Lastly, unite the edges of the peritoneum by interrupted sutures of silk or catgut. Success depends to a great extent upon asepsis and perfect hæmostasis. If draining is necessary, the gauze bag of Michulicz drain is advocated.

Pozzi has reported a series of myomectomies performed during pregnancy, in which gestation was uninterrupted, although some of the growths were interstitial.

Removal of the Uterine Fibroids without Hysterectomy.

MONTGOMERY, E. E., M.D. "Removal of uterine fibroids without hysterectomy."—*American Gyn. and Obstet. Journal*, April, 1898.

Among the pleas for this method of surgically dealing with fibroids of the uterus are the hesitancy of women to undergo an operation which will result in the loss of the uterus, and secondly the unpleasant effects of a premature menopanse as is induced by the removal of that organ. Myomectomy, with proper aseptic precautions is accompanied with less shock and discomfort to the patient than the sometimes easier operation of total hysterectomy. "All pedunculated or sessile submucous and interstitial fibroids not too large to pass through the pelvis should be attacked through the vagina," otherwise the abdominal route is the best.

Where one suspects the growth to be submucous and the cervix is not sufficiently patulous to admit the finger, the canal may be enlarged in three ways, viz.: packing with gauze, by tents, or by bi-lateral incision and of these methods, the use of the tent will be found to be the most satisfactory. The hollow laminaria tent will usually affect sufficient dilatation in twelve hours to admit of digital exploration, and, if one is not then prepared to operate, the canal may be kept open by packing it with gauze. As regards packing the uterine canal with gauze after a preliminary curetting, the author warns us against its use as it is apt to confuse the operator by giving him the impression that there is another fibroid nodule when he feels really the gauze through his abdominal opening.

Removal of One Free Calcified and Two Subserous Pediculated Fibromyomata During Pregnancy.

WALLACE, A. J., M.D., Edin. "Removal of one free calcified, and two subserous, pediculated fibromyomata during pregnancy."—*British Med. Jour.*, April 30th, 1898.

The patient was 38 years old and had been married for two years. A few months after marriage she had a miscarriage which was accompanied by a very severe hæmorrhage. Menstruation had always been normal and there was no history of any pelvic trouble.

In the centre of the abdomen, just above the pubes, was a firm, hard, rounded tumour, which felt like a stone and gave a dull percussion note. It was slightly moveable in every direction except downwards. Vaginal examination revealed the pregnant uterus lying retroverted and below the tumour, which could be easily felt to be

the size of a fœtal head. Between the tumour and uterus could be felt a second mass about the size of a pigeon's egg. As the pregnant uterus was locked down in the pelvis so that it could not enlarge, it was decided to interfere.

At operation, the tumour was found to be calcareous and to have simply adhesions for attachments, it being lifted out of the abdomen as soon as these were separated. Two pediculated sub-peritoneal myofibroma were removed from the anterior uterine wall.

The patient made an uneventful recovery from the operation and pregnancy was not interrupted.

The calcareous deposit occurred in the periphery of the tumour and was greatest at the points to which adhesions were attached. This points to the existence of some relation between this condition and that of lithopædion as the latter is associated with the presence of adhesions between the fœtus and its sac.

Enucleation of Uterine Fibroids.

ALEXANDER, WILLIAM, M.D., F.R.C.S. Enucleation of uterine fibroids." —*British Med. Jour.*, May 21st, 1898.

Judging from his own experience, the writer considers "that once a fibroid asserts itself by symptoms or signs, the life of the patient is always more or less spoiled. No medical man would recommend her at first-class rates to an insurance company, and probably she could not obtain an insurance policy from any office, a sure proof that the disease shortens life either directly or indirectly. If married, the patient with fibroid disease of the uterus runs the risks of all of the dangers of abortion and obstructed or complicated labour and she would be much better off without her fibroid, if it could be removed without great risk or the sacrifice of healthy organs. Good results, as regards life, are now attained from total hysterectomy for fibroids, the lessened risk of death, however, does not necessarily justify an operation.

In 1894, he removed a very large uterine fibroid, leaving the greater part of the uterus itself. During the operation the hæmorrhage was controlled by passing a double ligature of stout silk through the uterus and tying it around each half. The cavity left by the removal of the tumour was packed with lint soaked in perchloride of iron, and this was held in place by tying over it, the ends of the ligatures which had transfixed the uterus. The peritoneum was stitched to the uterus just below the ligatures and the wound closed. The patient made a good recovery, as did also a later one upon whom he operated. The uterine cavity was not opened in either case.

In Sept. 1896, three fibroids, averaging in weight ½ lb. each, were removed in a similar manner from one uterus. The large cavity left was packed with gauze, the upper edge stitched to the anterior abdominal wall and the wound closed over the gauze except at the lower end where an opening, through which one end of the gauze protruded was left. A small sinus, due to the use of silk formed but otherwise the patient recovered perfectly with a normal sized uterus. Several other very successful cases are reported by the same author.

Relation of Ventro-Fixation to Subsequent Pregnancies.

Boyd, G. M., M.D. "Pregnancy and labour complicated by anterior fixation of the uterus."—*Amer. Gyn. & Obstet. Jour.*, Sept. 1898.

While ventro-fixation of the uterus is usually followed by complete restoration to health, it is frequently the cause of more or less serious complication or obstruction to labour, although these results do not necessarily follow the operation when it is properly performed. Two cases of abnormal labour are reported by the writer.

In the first case, the patient had had her uterus tacked up to the anterior abdominal wall two years before she was confined. Since the operation, she had had two miscarriages and was now at full term with her fourth pregnancy (3rd since operation).

When admitted she had been 18 hours in labour and forceps had twice been applied ineffectually. The fœtus was dead and the anterior wall of the cervix and uterus were so greatly thickened as to cause considerable obstruction to the delivery of the fœtus. Excessive moulding of the dead fœtus had taken place, and it was delivered with axis traction forceps. The cervix was lacerated into the bladder, this resulting in a vesico-cervical fistula which was successfully repaired one month later.

Case two had had three full time children. Three years previous to this last labour, ventro-fixation had been performed and one ovary had been removed. The latter part of her pregnancy was pathological owing to considerable pelvic pain. Internal examination caused pain and the cervix was difficult to reach being drawn upwards and backwards. The anterior wall of the uterus was greatly thickened. On this latter account, labour was induced at the 8th month by introducing two rubber bougies into the uterus. After waiting for fourteen hours, the os was found only to be the size of a silver dollar, so it was dilated artificially under anæsthesia and the child delivered by forceps, it having died during delivery.

The writer advocated careful watching of a pregnant patient upon whom ventro-fixation had been previously performed, in order that a

threatened abortion might be averted by promptly opening the abdomen and setting free the uterus. Later on premature labour may be induced when the presenting part is displaced and there is marked thickening of the anterior wall of the uterus.

Accidental Hæmorrhage.

TWEEDIE, E. H., F.R.C.P.I. "The action of the vaginal plug in accidental hæmorrhage."—*Brit. Med. Jour.*, June 4th, 1898.

In deciding upon the form of treatment to be adopted in this condition, it is necessary to decide whether we have to deal with an atonic or an active uterus and this is difficult to decide if the patient is not in labour. If labour is in active progress, puncture of the membranes, and turning and bringing down a foot will stop the hæmorrhage as a rule, or forceps or accouchement force may be indicated. If the cervix be not dilated by the labour, the opening of it by force is apt to result in a more or less severe laceration. Instead of this, the writer advocated the use of the vaginal plug, as was the routine treatment of accidental hæmorrhage in the Rotunda Hospital during the last few years of Dr. Smyly's Mastership, on the theory that the vaginal tampon prevented external bleeding, excited labour pains and induced rapid dilatation of the os, as well as increasing the intra-uterine tension, should internal bleeding take place. In addition to the above, Dr. Tweedie states that the cotton acts as a species of tourniquet by pressing upon the uterine arteries through the vaginal fornices, by packing this part of the passage while firm traction upon the cervix is exerted. The plug is composed of several balls of absorbent cotton soaked in some antiseptic solution.

F. A. L. Lockhart.

Pathology.

UNDER THE CHARGE OF J. G. ADAMI.

Acellular Fermentation.

EDUARD BUCHNER. Lecture upon Acellular Fermentation, delivered before the Berliner Chemische Gesellschaft, March 14th, 1898.—*Berichte der Deutsche Chemischen Gesellshaft*, 36, 6, 568.

The subject of fermentation and its nature is one which, throughout this century, has caused great interest, and one which has been approached from several aspects, which further, is of special interest to the medical man in that from of old a similarity has been recognized between fermentative processes and conditions of disease.

When Schwann in the thirties discovered the yeast cell, the first great step forward was accomplished, and when next in the sixties Pasteur showed that other fermentations, as for instance the lactic acid fermentation, were also due to micro-organisms, and that in fact, the presence of living microbes was absolutely essential in all fermentative processes the second great advance was accomplished.

Into the excitement that was caused by this discovery of Pasteur, and the theories which it exploded, it is not necessary for me to enter. I need but to refer to the now well-known fact that it was these studies of Pasteur which led Lister to recognise the nature of the process occurring in open wounds, and so led him to determine that putrefaction is but fermentation occurring in connection with animal tissues, and so caused him to study how to destroy the micro-organisms appearing in connection with wounds, leading in this way to the establishment of antiseptic and again of aseptic surgery.

Pasteur regarded the reaction which results in the production of alcohol from sugars during the process of fermentation as one which is purely physiological brought about by the life of the yeast cell itself. On the other hand, Moritz Traube, Berthelot, Liebig and Hoppe-Seyler, were of the opinion that the yeast produces a substance —a ferment or enzyme—which breaks up cane sugar into two bodies, fructose or fruit sugar, and glucose or grape sugar, and this hypothetical substance was provisionally called invertin. They pointed out that there would seem to be another substance which caused the further breaking up of these sugars into carbon dioxide and alcohol.

The main observation upon which this opinion is based, is that if

yeast be taken and macerated, and the yeast cells in this way destroyed, the fluid or extract separated off from the disintegrated cells when brought into contact with cane sugar, will perform the first stage in the decomposition of the cane sugar ; but until recently no one has been able to bring about the second stage and the production of alcohol without living yeast cells being present. Thus until now, the theory with regard to the existence of a second enzyme leading to the production of alcohol from glucose, has lacked experimental proof. It has been plausible, but in the absence of proof, what has been termed the vitalistic theory, has been more popular. It has been generally held that while the first stage in the fermentation of sugars has been brought about by the action of an enzyme secreted by the cells ; the latter stage has been accomplished by the vitality of the protoplasm of the yeast cells, the enyzme preparing the cane sugar, which now, in the modified form of glucose, is taken up as a food material by these cells, and in the digestion thereof (as it may be termed) it is broken down, alcohol and CO_2 being given off into the surrounding medium, very much in the same way that urea, urates and other bodies are passed off from the human organism as distinct end products of the metabolism occurring in the animal tissues.

For some years past Prof. Buchner has been studying this subject of the products of bacterial and microbic activity, and, as a resident of Munich, his attention has almost naturally been directed to the yeast plant. At last he has been able to settle this matter of the conversion of sugars into alcohol and to prove that it is essentially of a chemical nature.

Fresh Munich beer yeast is taken and submitted to a pressure of 50 atmospheres, by which the liquid in which the cells are floating is removed. The dry cake is then mixed with an equal part of dry quartz sand and a fifth part of a diatomaceous earth (kieselguhr) and placed in a specially constructed comminutor, consisting of a weighted porcelain pestle, oscillating in a mortar, which is driven by means of a motor. The trituration is continued till the dry cake has once more become moist. The moisture here comes from the yeast cells by the rupture of their envelopes and the consequent setting free of the protoplasmic contents. A microscopical examination showed that at least 40 per cent. of the envelopes were disintegrated. The moist mass is then placed in a hydraulic press and a pressure of 500 atmospheres (F500 pounds to the square inch) is applied. After two hours the cake is removed, moistened with distilled water and again submitted to the same process. So violent has been the treatment to which the cells have been subject, that only 4 per cent. of the envelopes

are now intact. From 1 kilo of yeast, after the addition of 140 ccm. of water, there are obtained 560 ccm. of fluid, so that one must assume that 350 grams of fluid have been expressed from the cells themselves.

The fresh extract is a nearly clear yellow, slightly opalescent fluid, having the characteristic yeasty smell. It contains some carbon dioxide gas which is given off at 40°C., and a considerable quantity of coagulable albumen.

Enzymes are present as is shown by Schönbein's test.

One part of the extract is diluted with ten parts of water and six parts of a 10 per cent. solution of hydrogen peroxide added.

To another portion eight parts of water, two parts of a 2 per cent. solution of hydrocyanic acid and six parts of the hydrogen peroxide are added. In the first test one obtains immediately a violent evolution of oxygen due to the action of the enzyme on the hydrogen peroxide. In the other case no reaction takes place.

If the hydrocyanic acid be removed from solution by a current of air, the enzyme reacts with the peroxides.

Here we have to assume that a loose combination takes place between the hydrocyanic acid and the enzyme. This compound is incapable of setting free oxygen, and is so unstable that a current of air decomposes it, giving the ferment in its former reactive state.

Of the different enzymes which are present in the extract, invertin has always been detected. There are also maltose and a ferment which hydrolyzes glycogen. Oxydase, which has been found by G. Bertrand as a constituent of many plants, is present in some quantity. Proteolytic enzymes have been detected by M. Hahn through the liquefying action which they excite on gelatine.

The most interesting property of this extract is its capacity for converting sugars into alcohol and carbon dioxide. This not only takes place with cane sugar, but also with malt, grape and fruit sugar. Lactose and mannite are not fermentable. Experiments made with this extract show that it possesses equal fermentative power with yeast. The action is, however, much quicker.

As a result of these experiments, Buchner draws the following conclusions :

That living yeast cells are not necessary for fermentation.

The process is not a physiological act, but connected with the presence of an enzyme, Zymose, which is, however, only formed by living cells.

The isolation of this product has so far been unsuccessful on account of its instability and the presence of other enzyme.

Against this view three objections have been raised :

1st. That the micro-organisms present in the extract are really the cause of the fermentation. This is untenable, as the filtered solution is found to be almost free from yeast cells or bacteria. Further the addition of antiseptic agents, such as arsenious acid, chloroform, benzol and large quantities of glycerin and sugar do not inhibit the action of the extract.

2nd. A second objection is that the carbon dioxide evolved is not the result of the alcoholic fermentation, but is conditioned by some other process. Those who have raised this objection have not characterised the other reaction of which they speak. The quantitative experiments showed that alcohol and carbon dioxide are formed in amounts which closely correspond with the theoretical quantities acquired by the equation for alcoholic fermentation.

3rd. It has been suggested that living particles of plasma may yet be present in the extract. If, however, the fluid be kept at 100°C. for six hours, it is still capable of fermentative action. The extract precipitated by absolute alcohol also causes an alcoholic change with cane sugar.

Substances, such as arsenious acid, which act poisonously on protoplasm do not prevent the action of the extract.

If one examine the foregoing experimental evidence, it must be concluded that the presence of zymose has been demonstrated, and that one is again able to point to the comparatively simple action of a distinct substance as the cause of a process which has hitherto been regarded as an extremely complicated physiological one.

C. G. L. Wolf.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron, 903 Dorchester street, Montreal.]

The Dominion Medical Monthly and Ontario Medical Journal.

February, 1898.

1. Tuberculosis Testis. J. W. S. McCULLOUGH.
2. Acute Traumatic Gangrene. W. E. STRUTHERS.
3. Case of Anomalous Dentition. H. H. OLDRIGHT.

March, 1898.

4. Social and Personal Measures for the Control and Limitation of Insanity. E. H. STAFFORD.
5. The Treatment of Inebriate Prisoners. A. M. ROSEBURGH.
6. Correct Diagnosis and its Necessity. A. B. HARVEY.

April, 1898.

7. A Few Thoughts in Regard to Syphilis. W. C. HEGGIE.
8. Anæsthesia and Analgesia. H. H. OLDRIGHT.
5. Treatment of Inebriates. (Cont.) A. M. ROSEBURGH.

May, 1898.

9. Puerperal Eclampsia. C. J. O. HASTINGS.
10. Chronic Cystitis, its Causes, Diagnosis and Treatment. B. HAWKE.

1. MCCULLOUGH gives the clinical history of a man who had tuberculous disease of both testicles. He also describes a case of appendicitis and one of hydronephrosis with subsequent nephrectomy.

2. STRUTHERS describes a case of gangrene of the leg following a wound by duck-shot. When the man came under observation his clothes were rank with stable filth and several fragments were found in the wound. The leg was thoroughly irrigated and dressed antiseptically, but on the following day the anterior surface was black and painful and quantities of gas escaped from the wound. The leg was removed in the upper third, but the process extended into the body and the man died.

3. The baby was born with two lower central incisors cut and set in a hinge-like moveable process of the alveolar margin of the jaw. There was an exostosis at the symphysis. The child developed well-

marked symptoms of syphilis. The process became firmly united, but the teeth softened and were soon worn to the level of the gums.

4. STAFFORD considers that insanity is the shadow of a faulty civilization, and much can be done to limit its spread. He divides insane persons into two classes. The majority are destined to be insane as the child of African parents is destined to have a dark skin. Here the insanity is not the outcome of ignorance, rashness or misfortune of the individual himself—it is a crime of the parents. It is a crime for many people to marry. On the other hand the minority owe their insanity to their own ignorance, rashness or misfortune. Had they not been ignorant, had they not been rash and imprudent, or had they not been unfortunate, they would never have become insane. The measures for prevention should be mostly personal. Society and legislation can do nothing.

The stupidity of the present educational system, both in Europe and America, is indirectly accountable for a great deal of insanity. This system is fanciful to the verge of silliness when the mental needs of the child are considered. The majority receive their knowledge between ten and twenty. From ten to sixteen the boy or girl is at school. The mind during that time is subjected to one constant strain It is always on the stretch. The inhuman practice of subjecting the student to periodical examinations makes matters still worse. The superficial facility of one in receiving information in a short time is put in glaring contrast with the natural slowness of another. The cerebral apparatus is degraded to the level of the digestive system. Indeed few stomachs would stand the strain then put upon the brain. Parents are probably ignorant of the great risk they are running at the time. There is a great need of reform. Some day the main aim in education will be to teach men and women *to think* and to live. Some day one of the hardest tasks in life will not be dropped upon the yielding shoulders of unmatured youth, but will be undertaken when the individual is better able to endure it. These four years should be a time of rest not of tremendous strain. Attention to work, food, sleep and clothing, is very essential. No child should do violent or heavy work until its bones are developed. Lack of sleep while often the first symptom of insanity is also often one of the causes. Some wise saw of the past is evidently accountable for the gospel of early rising. Men and women are not poultry, and the search for the early worm is a senseless proceeding. The development of the mind requires a great deal of sleep. Above all things the emotions should not be stirred. Psychology has revealed the fact that the religious temperament and the erotic temperament are very closely related. To bring religious emotion into full play at the critical period at, or just follow-

ing, puberty, already referred to, has often been sufficient to unbalance the mind. The mind is weak and unstable, and the terrible force of these emotions passes over the delicate regions of thought like a deep and heavy storm. In young men and women hysteria is often mistaken by evangelists and religious advisers for what is called religious conviction, and under that mistake is encouraged by them to the great peril of the person.

Lastly comes misfortune as a cause. Sunstroke and accidents causing injury to the head, besides some contagious diseases which alter the consistence of the blood, may lead to mental aberration. Starvation and fright may be classed with these other misfortunes as unexpected. We can provide against them. It is our own fault if we are ignorant.

5. At the January monthly meeting of the Executive Committee of the Prisoners' Aid Association of Toronto, Dr. ROSEBURGH was commissioned to visit American Inebriate Hospitals and to interview specialists in alcoholic inebriety with a view to the introduction of special medical treatment of inebriates while undergoing imprisonment.

In executing the commission he visited the various institutions in Canada and the United States, and in formulating his recommendations, endeavoured to secure the maximum of efficiency with the minimum of expense. The recommendations may be summarized as follows: (1). The appointment by the Lieutenant-Governor-in-Council of an Inspector of Inebriate Institutions. This inspector should be a qualified medical practitioner who had made the medical treatment of inebriety a special stduy. (2) The establishment by the Ontario Government, of an industrial reformatory for the more hopeless or incorrigible class of habitual drunkards. The farm-colony plan is recommended with cheap buildings, and the indeterminate system of sentences adopted. (3.) The establishment in Toronto of an hospital for the treatment of the more hopeful class of inebriates, where a course of three or four weeks' treatment would be given. In other cities of the province an inebriate department should be established in the existing general hospitals. (4). The introduction of special medical treatment for the relief of dipsomania among the inmates of the Central Prison, Toronto. (5). The adoption of the probation system for the supervision of incipient drunkards at large on suspended sentences. (6) A cottage home in Toronto for the care and medical treatment of the more hopeless class of female drunkards. (7). Sentencing the more hopeless class (the gaol class) of chronic female drunkards to the Mercer Reformatory on the maximum sentence of two years. (8). In the adoption of scientific medical treatment, the Norman Kerr-Crothers

system or general plan of treatment is recommended. In the interests of science and good morals proprietary remedies should not be given.

6. HARVEY discusses the general principles of the science of recognizing disease and of distinguishing one disease from another. It is the imperfect diagnosis that renders doubtful the value of the remedies in use. No means, however laborious, should be neglected in arriving at a correct conception of each case.

7. HEGGIE offers a few ideas in regard to syphilis. He has endeavoured to find out some cause why in one person the disease runs a benign course, while in another a malignant one. He believes that the main cause of this difference is in the soil on which the disease is transplanted; and, further, that this is fertile, or not fertile, according as immunity has been transmitted or not. Instead of believing fondly in the old dogma, that children are bound to inherit this disease from one or other of their parents, it begins to look as if many have transmitted to them a resistance to the disease, and that the grandchildren of syphilitics and the children of cured syphilitics are less liable to contract the disease than the offspring of clean ancestors, and when contracted it generally runs a benign course. He therefore does not believe that there is any hereditary syphilis, but that children so born contract the disease from the maternal parts in the usual way, by contact, or through the maternal circulation. The histories of children born with syphilis, the mother not being a syphilitic, should be looked on with grave suspicion. In regard to treatment his experience has been that in the true syphilitic state mercury is the remedy *par excellence*. In the sequelæ, potassium iodide stands without a rival. Of all the preparations of mercury the bichloride easily takes the lead, especially immediately after infection.

8. [This paper was noticed last month.]

9. HASTINGS discusses the cause and treatment of puerperal eclampsia. He thinks that all will agree that the seizures are of a toxæmic origin. In the pregnant woman there are two distinct and separate organisms, throwing almost double work on the excretory functions of the mother. These excretory functions of the pregnant woman are not as active as in the non-pregnant condition, while the amount of toxines is very much increased. In all toxæmic conditions there is more or less congestion of the kidneys. Probably this explains the albuminuria of pregnancy, and the albumen in the urine is the first indication that the patient is suffering from an attack, more or less severe, of toxæmia. These toxines, if not rapidly eliminated, come in contact with the supersensitive nerve centres, and are very likely to produce eclampsia.

The treatment is simply that of toxæmia ; and should be, for the most part, preventive.

10. HAWKE discusses the pathology and treatment of chronic cystitis. The medical treatment he has often found very unsatisfactory, and relates the history of a man cured by suprapubic cystotomy after all other methods had failed.

The Canadian Practitioner.

May, 1898.

1. Appendicitis—Its Clinical Aspects. J. F. W. Ross.
2. The Symptoms and Pathology of Seborrhœic Eczema. GRAHAM CHAMBERS.
3. Colles' Fracture. R. FERGUSON.
4. Opium in Heart Disease. ALEXANDER MCPHEDRAN.
5. A Case Showing in a Peculiarly Marked Manner one of the Effects of Eye-strain. G. HERBERT BURNHAM.

1. ROSS records several cases of appendicitis, presenting different phases of the disease, and strongly urges early operation. The diagnosis should be made without difficulty in the great majority of cases. When there is sudden pain in the abdomen, vomiting, tenderness on pressure and rigidity of the right abdominal parietes, it points almost invariably to the lesion, and then medical treatment should be shelved. Physicians should call upon the surgeon early and not allow the golden opportunity to slip by, when, if the patient is saved, it is only after a prolonged convalescence.

2. CHAMBERS describes the general symptoms and pathology of this disease, and the clinical features as they appear in the different localities on the body.

3. FERGUSON describes the deformity and its causes, produced in the injury known as Colles' fracture. He points out that it is not merely a broken bone that has to be treated, but a severe sprain and injury to the wrist joint as well. He advocates a long anterior and short posterior splint, allowing free movements of the fingers. The plan suggested by Pilcher of enveloping the wrist with a snug strip of adhesive plaster is applicable only in simple cases where there is no extensive laceration of the ligaments.

4. MCPHEDRAN, writing upon the use of opium in heart disease, says that in most of the writings on the treatment of cardiac failure too little is made of the great benefit to be derived from the use of the drug in such conditions. Many do not even make any reference to it, while others place it next to digitalis. Several cases are cited which illustrate the great value of morphine given hypodermically when the failure of the heart appears to be largely due to exhaustion of the

nerve centres, as shown by the irritable action of the heart and the paroxysmal respiratory distress. The morphine quiets the irritable heart and enables the patient to obtain sleep, during which excretion is increased and the circulation and nutrition improved. In proportion as the dyspnœa and distress are due to serous effusions into the pleural cavities, the pericardium, the lungs, etc., morphine becomes less efficient in giving relief. In these cases the symptoms are largely, if not wholly, due to mechanical causes resulting from the presence of the serous exudate, and can only be relieved by removing the causes.

5. BURNHAM relates the history of a man who had suffered intense pain in the left eye, temple, side and back of the head. The sight of the eye was poor, there being merely perception of large objects. Examination showed a good deal of hypermetropic astigmatism in the left eye, but of a much less degree in the right. Correctly fitting glasses completely relieved the symptoms.

Maritime Medical News.

May, 1898.

1. Diagnosis of Intra-Abdominal Disease. P. R. INCHES.
2. Osteopathy. G. R. J. CRAWFORD.
3. Action of Certain Drugs on the Gastric Secretion. ANDREW HALLIDAY.

1. INCHES, in an interesting paper, points out the many difficulties that frequently render an exact diagnosis a matter of doubt, perplexity and anxiety to the practitioner, and holds the opinion that the exploratory incision in such cases is perfectly justifiable, and that in the future the practice will be more often advised than it has been in the past.

2 CRAWFORD gives an account of the hot conflict that had recently taken place between the New Brunswick Medical Society and the disciples of the latest fad in quackery known as "Osteopathy" over a bill brought by the patrons of the new method before the New Brunswick Legislature, to legalize its practice. The bill was fortunately defeated in committee, but by the slender majority of one The definition of "Osteopathy," taken from their college (?) catalogue is interesting. "Osteopathy may be formally defined as the science which consists of such exact exhaustive, and verifiable knowledge of the structure and function of the human mechanism, anatomical, physiological and psychological, including the chemistry and psychophysics of its known elements, as has been discoverable certain organic laws and remedial resources within the body, by which nature under the scientific treatment peculiar to osteopathic practice, apart from all ordinary methods of extraneous, artificial or mechanical principles, molecular activities and metabolic processes, may recover from displacements, derangements and consequent disease, and regain its nor-

mal equilibrium of form and function in health and strength." [It may be hoped that the inhabitants of New Brunswick realize the deep debt of gratitude they owe the New Brunswick Medical Society for protecting them against such a fraud.]

3. Halliday calls attention to the action of antipyrine, phenacetine, and quinine on the gastric secretion, with special reference to the total acidity and the free hydrochloric acid.

The Canadian Journal of Medicine and Science.

May, 1898.

1. The Treatment of Inebriety. A. M. Rosebrugh.
2. Some Remarks on Mechanico-Therapeutics. T. H. McGillicuddy.
3. California as a Tourists' Resort. John Hunter.
4. How to Hypnotize. Sydney Flower.

1. [Noted above].

1. McGillicuddy considers some of the remedial effects of the employment of curative exercise, or mechanical or manual treatment. He claims that it will regulate the circulation, increase secretion and excretion, increase respiratory power, increase digestive power and assimilation, increase vital action, and regulate muscular action.

3. Hunter advises physicians to go to California if they wish to spend a pleasant holiday and describes the various localities of interest in the State.

4. Flower says that the physician will find that the whole art of applying hypnotism therapeutically lies in the suggestions given and the manner of making them, and he proceeds to point out how this may be done.

The Canadian Medical Review.

May, 1898.

1. The Treatment of Inebriates. A. M. Rosebrugh.
2. Pulmonary Tuberculosis. John Hunter.
3. Gastro-Duodenal Ulcer. H. J. Hamilton.

1. [Noted above]

2. Hunter says that one cannot live long at a health resort without observing many things concerning tuberculosis, that are not written in text-books. One of the first to obtrude itself on the attention is the great multitude of people affected with phthisis. There one realizes the terrible ravages the "white plague" is making upon the race. A second noticeable feature is the varied stages of the disease and the physical conditions of the patients. Another impression that forces itself very strongly on the physician's attention is the urgent need of an early recognition of the disease. It is a most lamentable and dis-

creditable fact that the initial symptoms and conditions in by far the larger percentages of cases are overlooked or attributed to other causes. The treatment of phthisis should consist fundamentally in seeking out and opening up every avenue conducive to the restoration of health. He thinks that it can be positively asserted that ninety-five per cent. of doctors know practically nothing about so-called health resorts. The patient should not be loaded with advice and prescriptions, but should be advised to put himself under the care of some competent and reputable local physician. One of the great dangers of health resorts is the possibility of infection or re-infection.

3. HAMILTON relates the history of a man, 28 years of age, who had suffered from periodical dyspeptic symptoms. He had complained of nausea and a sense of fulness after eating, with intense soreness over the stomach. He had had vomiting of black blood followed by tarry stools. After some time a swelling developed at the right costal margin. While this swelling increased he felt sick, the nausea becoming intense, constipation was marked and jaundice supervened. After a severe attack of vomiting the swelling would disappear and be followed by diarrhœa and intense irritation at the anus. The examination of the stomach contents showed excess of hydrochloric acid, and starch digestion incomplete. In this case the duodenum was certainly involved and at a point at the opening of the common bile duct. The feature of the case worthy of note was the stenosis of the common bile duct which was opened by the muscular effort of vomiting. *Kenneth Cameron.*

L'Union Medicale du Canada.

February,, 1898.

1. Des affections pendant la période puerpérale. E. A. RENÉ DE COTRET.
2. Nouveau modèle de serre-nœud à anse froide et galvanique combinées. A. A. FOUCHER.
3. Opération césarienne : application du forceps à travers la voie opératoire, sutures utérines, solution de gélatine comme hémostatique. ALBERT LAURENDEAU.

March, 1898.

4. Exposé succinct des résultats obtenus et de l'expérience acquise dans deux cent quarante-huit opérations abdominales. A. LAPTHORN SMITH.

April, 1898.

5. De la contention des fractures par la gouttière plâtrée. O. F. MERCIER.
6. Le Tétanos. D. A. DÉROME.

May, 1898.

7. La physiologie des bactéries. J. E. LABERGE.

8. Restauration d'un prépuce précédemment enlevé par la circoncision. O. F. MERCIER.

1. This paper is an essay on mastitis, with a description of the forms originating from the lymphatics and from the galactophorous ducts. The views of various writers, well-known and otherwise, are given on prophylaxis and treatment. Nothing new is advanced.

2. This writer makes a strong plea for the country practitioners to undertake major cases and not to hand everything over to the specialist. He thinks there is a danger of becoming "courtiers en médecine." His patient possessed a rachitic pelvis. At her first confinement a dead child was extracted by forceps. At the second craniotomy was done. The conjugate was 6 centimetres. As for the choice between symphysiotomy and Cæsarian section, the writer's view is that when the conjugate is between 6½ and 9 centimetres symphysiotomy is indicated: when below 6, Cæsarian section. In conclusion he somewhat naïvely remarks that if there is a choice between the life of a mother who conceives a child that she knows she cannot bring alive into the world and that of an infant who has had no say in its own production, the safety of the child should transcend that of the mother.

4. This paper has been reported in the January number of this Journal, p. 64.

6. This is a valuable *resumé* of the researches leading up to the discovery of tetanus antitoxin, and also describes the mode of preparation as practised in the Pasteur Institute of Paris. The immunising power of this serum is such that an injection of one thousand millioneth part of its body weight injected into a mouse will prevent death. The dose for man and the larger animals is 10 cc., repeated if necessary, but the original wound should be treated antiseptically as well or excised.

La Revue Medicale.

February 2nd *and* 9th, 1898.

1. Les phénomènes psychiques, et la médecine. CHAS. VERGÉ.

February 16th, 1898.

2. De la diphtérie à la campagne. S. G. PAQUIN.

February 23rd, *and March* 2nd, 1898.

3. Opérations sur les paupières. JEHIN PRUME.

March 9th, 1898.

4. Cas de grossesse extra-utérine : laparotomie. A. LAPTHORN SMITH.

March 23rd, 1898.

5. Un cas de corps étranger des fosses nasales. L. N. J. FISET.

March 30th and April 13th, 1898.

6. Du traitement électro-thérapeutique des vomissements incoercibles de la grossesse. M. D. BROCHU.

April 6th, 1898.

7. Rapport de deux cas de tumeurs de la matrice expulsées à la suite de traitement électrique. A. LAPTHORN SMITH.

April 20th, 27th, and May 4th, 1898.

8. De l'électricité statique en médecine. CHARLES VERGÉ.

May 11th, 1898.

9. Observation d'un cas de blessure de la verge et du scrotum ; autoplastie. J. F. DUSSAULT.

May 25th and June 1st, 1898.

10. Bains d'air chaud sec. P. V. FAUCHER.

1. This is an interesting account of various psychoses. It deals with the "jumping Frenchmen" of the lumber woods, lycanthropy (loup-garou), and other popular superstitions as "La chasse-galerie" (*vide* Drummond's Phil-o-rum Juneau). Telepathy, clairvoyance, spirtualism, thought-reading and hysteria gravis are taken up.

3. Jehin-Prume describes cases of ectropion, epithelioma of the lids and double ptosis on which he had successfully operated.

5. In this case there was a button completely blocking the nasal passage, embedded in granulations. It was removed with the serre-nœud. The button was thickly encrusted with salts.

6. This is a record of a case of obstinate vomiting of pregnancy cured by electricity. The writer employed faradism. The positive pole was applied to the external os of the uterus, and the other to the epigastrium. A weak current, gradually increased, was used for 10 minutes. This was repeated.

7. These cases have been reported in the April number of this Journal, p. 304.

8. This is a description of various electrical appliances, and the application of electricity to the treatment of chlorosis, dysmenorrhœa, neuralgia, migraine, chorea, writer's cramp, hysteria, neurasthenia etc. *Albert G. Nicholls.*

Reviews and Notices of Books.

The Nervous System and Its Diseases. A Practical Treatise on Neurology, for the use of Physicians and Students. By CHARLES K. MILLS, M.D., Professor of Mental Diseases and of Medical Jurisprudence in the University of Pennsylvania; Neurologist to the Philadelphia Hospital. Diseases of the Brain and Cranial Nerves, with a General Introduction on the Study and Treatment of Nervous Diseases. With 459 illustrations. Philadelphia: J. B. Lippincott Company. London: 6 Henrietta St., Covent Garden, 1898. Montreal: Charles Roberts.

This, the most recent contribution to the great department of Neurology, promises to be when completed a work that will take a worthy place beside the great English work of Gowers. In the present volume, the diseases of the brain and cranial nerves are considered. Dr. Mills hopes to complete the work in a second volume, dealing with the diseases of the cord, insanity and the medical jurisprudence of both nervous and mental diseases.

The introductory part of the work is devoted to a very full and clear description of the anatomy and physiology of the nervous system together with an account of methods of investigation and the general principles which underlie the scientific management of nervous diseases in general.

The author devotes a good deal of space to the consideration of cerebral localization. We know of no work that deals with this important subject in such a full and clear manner. The cranial nerves and their disturbance of function receive also full consideration. Dr. Mills adopts very fully the nomenclature and terminology of Dr. Wilder. This may be an advantage, but it is at least confusing. We doubt very much whether it will ever become popular. Dr. Mills' work contains upwards of 1000 pages. It is an excellent specimen of book making. The illustrations are numerous and well executed. J. S.

A Compendium of Insanity. By JOHN B. CHAPIN, M.D., LL.D., Physician in Chief Pennsylvania Hospital for the Insane; late Physician-Superintendent of Willard State Hospital, New York. Illustrated. Philadelphia: W. B. Saunders. 1898.

There being so few satisfactory works of this class, this little text-book will be welcome, especially to medical students, general practitioners and even members of the legal profession. The writer's purpose has been to compile for such, in concise form for convenient use, the principle facts relating to diseases of the mind, and in this he has succeeded admirably.

The classification made is simple, the author dealing only with such forms of insanity as are commonly met with. Many pages are devoted to treatment, so that the practitioner who may be obliged to treat a case of mental disorder at home will find many useful hints to aid him in his difficult task. The chapter on medical certificates and feigned insanity will also be found of much service to all who require to send patients to hospitals.

A distinguishing feature of the work are the illustrations, which are reproductions of photographs of some of the author's patients. These are as helpful as can be expected.

The volume is a modest one, yet throughout it bears the stamp of one who has had long experience of his subject, and the well-earned reputation of the writer will alone secure its success. T. J. W. B.

Diseases of the Nervous System. A Handbook for Students and Practitioners. By Charles E. Beevor, M.D., F.R.C.P., Physician to the National Hospital for the Paralyzed and Epileptic. With Illustrations. London : H. K. Lewis, 136 Gower Street. 1898.

This compact and handy volume is the latest addition to the well-known *Lewis's Practical Series*,

After an introductory chapter, an admirable account of the anatomy and physiology of the nervous system follows. This chapter, although short, comprises the essentials of what is frequently looked upon as a very difficult subject. Dr. Beevor, however, has the power of making difficult subjects plain.

The following chapters deal with the method of case-taking and modes of examination. We would especially call attention to the clearness with which the author deals with diplopia and how to discover the muscle or muscles at fault.

The different diseases of the peripheral and central nervous system are dealt with in detail, of necessity succinctly, but still with a clearness and simplicity which is refreshing.

The work is well illustrated and altogether a creditable production.

J. S.

Diabetes Mellitus and Its Treatment. By R. T. Williamson, M.D., M.R.C.P., Medical Registrar, Manchester Royal Infirmary. With Eighteen Illustrations. (Two colored.) Edinburgh and London. Young J. Pentland. 1898.

Dr. Williamson has produced a work which we have no doubt will be for some time the standard treatise in the English language on this disease. The work is one of over 400 pages, and it is needless to say that the whole subject is dealt with in a very complete manner. The author from his position in the Manchester Royal Infirmary has had unusual opportunities for becoming intimately acquainted with the protean manifestations of diabetes.

Among many interesting observations noted by the author the following deserve mention. In sixteen cases of diabetic coma, the urine was found to contain casts. In the majority of the cases, the urine had been examined for days before the onset of coma, but in none were casts found until about twenty-four hours before the onset of the coma. He believes that in severe cases of diabetes, the appearance of casts, in the way above described, is an important sign, pointing to the near approach of coma. The numerous views advanced to explain the nature of diabetic coma are fully described, but the author is of the opinion that the true cause remains yet to be determined. Changes of a degenerative nature in the spinal cord, resembling those met with in pernicious anæmia, are figured and described. They were found limited to the postero-internal and postero-external columns. Mention is made of somewhat similar changes described by others.

The cord changes are attributed to a toxic blood state. As changes of a somewhat similar character are met in many wasting and nutritional disorders, it is difficult to say whether they are the direct effect of infection, or simply the result of disordered nutrition.

The treatment is very carefully and fully considered.

Altogether the work is the result of painstaking labour, and is a mine of information on the interesting and important disease of which it treats.

The publishers have spared no pains in bringing out what is a very handsome volume. J. S.

Manual of Operative Surgery. By H. J. Waring, M.S., M.B., B.Sc., (Lond.) F.R.C.S., Demonstrator of Operative Surgery and Surgical Registrar; late Senior Demonstrator of Anatomy, St. Bartholomew's Hospital; Surgeon to the Metropolitan Hospital; Surgeon in Charge of the Throat and Ear Department, Metropolitan Hospital: Surgeon to the Belgrave Hospital for Children: and Erasmus Wilson, Lecturer to the Royal College of Surgeons, England. Edinburgh and London: Young J. Pentland. New York: The MacMillan Company. 1898. pp. 644.

As stated in the preface "this book has been written with the object of serving as a text-book for the classes held in the Operative Surgery Department of St. Bartholomew's Hospital." A short description is given of the main indications for each operation or group of operations. An introductory chapter deals with the indications for operations, preliminary preparations for asepsis and anæsthesia, the selection of instruments, position of patient and operator and his assistants, actual operation and after treatment.

Subsequent chapters deal with the different operations in detail. It is somewhat surprising that in the description of the different operations for hæmorrhoids no mention is made of that by the clamp and cautery. The methods described are the removal by the ligature, Whitehead's

and curetting, the use of the ligature being recommended as the most safe and satisfactory.

Three operations for the radical cure of hernia are given: Bassini's, Kocher's, and Macewen's, the different steps being very clearly illustrated. The chapter on amputation of the breast is hardly as full as its importance merits. In speaking of excison of the tongue, the necessity of making a careful dissection of the side of the neck with the object of removing all the lymphatic glands is not emphasized, and the partial removal of the tongue not recommended. Mr. Butlin, also a surgeon to St. Bartholomew's has lately written in favour of partial excision, and he speaks after having had a large experience. Altogether the book is concise, well illustrated and to be recommended. G. E. A.

A Treatise on Aphasia and other Speech Defects. By H. Charlton Bastian, M.A., M.D., F.R.S., Physician to the National Hospital for the Paralyzed and Epileptic. With illustrations. London: H. K. Lewis, 136 Gower Street. 1898.

During the last two or three years several special works have appeared on the ever interesting subject of aphasia. The subject is one that naturally presents great difficulties, and the literature bearing on it has become so voluminous that it is a great labour to present in a clear way what is really known. It has been so obscured by theoretical opinions, without any foundation of fact, that it is impossible for one who has not paid great attention to the matter and is, at the same time, capable of investigating it to have any clear ideas concerning its nature.

The whole tenor of Dr. Bastian's able treatise is to simplify and make plain. There is a refreshing absence of burdensome nomenclature, such as is too characteristic of the works of certain authors who have written on the subject.

He endeavours to found his conclusions on accurately observed cases during life, and completed by properly conducted post-mortem examinations. It is not possible in the space at our disposal to give a survey of the full and complete way in which the author takes up the various forms of speech defects.

The work is a necessity to any one who takes an interest in the subject and who desires to know what is really known about it. J. S.

Accident and Injury: Their Relations to the Nervous System. By Pearce Bailey, M.A., M.D., Assistant in Neurology, Columbia University. New York: D. Appleton & Co. 1898.

Dr. Bailey has performed a valuable work in bringing together what is known about the relation between injury and diseases of the nervous system. The traumatic neurotic disorders are a very important group of diseases, interesting not only from a purely clinical standpoint, but also in their medico-legal relations.

Most of the literature relating to these disorders is in scattered monographs, chiefly foreign, so that it is impossible for the general practitioner to be conversant with all that is known on the subject.

An introductory part of 50 pages is devoted to a description of the significance of nervous symptoms. An unnecessary addition, we think, to the work.

Upwards of 100 pages are devoted to the organic effects of injury to the nervous system and 150 to the functional disturbances resulting from similar causes.

The work concludes with a few pages dealing with malingering and the treatment of the traumatic neuroses.

There are many well executed illustrations, and the volume, as a whole, is a credit to both author and publisher. J. S.

Selected Essays and Monographs. Translations and Reprints from various sources. London: The New Sydenham Society. 1897.

The following are the contents of this volume:

1. A contribution to the Study of Syringomyelia. By Isaac Bruhl, M.D. Translated with Notes and Additions, by James Galloway, M.D., and Lindsay Scott, M.D.

This is a very complete account of our present knowledge of this interesting disease.

2. A Case of Cerebro-Spinal Syphilis, with an Unusual Lesion in the Spinal Cord. By Henry M. Thomas, M.D., of Johns Hopkins University.

A well reported case of syphilitic arteritis of cerebral vessels and diffuse gummatous formations in several cranial nerves and substance of the brain, gummata of anterior roots of the third cervical nerves, meningitis of the cord, poliomyelitis of lumbar enlargement, and hyaline degeneration in the wall of the small arteries.

3. Pemphigus Vegetans by Prof. Köbner. Translated by F. H. Barendt, M.D. Pemphigus Vegetans, by Prof. Neumann. Translated by F. H. Barendt, M.D.

4. Observations on Yaws and its influence in originating Leprosy. An epitome of Dr. Nicholl's Report on Yaws, compared with British Guiana and Figi Experiences, by J. S. Wallbridge and C. W. Daniels.

5. Two Papers on Frambœsia.

6. On the Visceral Complications of Erythema Exudative Multiforme, by Wm. Osler, M.D.

7. Sleep in its Relations to Diseases of the Skin, by L. Duncan Bulkley, M.D.

8. A Remarkable Case of Purpuric Eruption ending in Gangrene, apparently caused by Sodium Salicylate, by F. S. Shepherd, M.D., of Montreal.

9. Syphilis and General Paralysis, by Prof. Fournier. Translated by Guthrie Rankin, M.D.

10. The Relation between Treatment in the Early Stage and Tertiary Syphilis. J. S.

Third Annual Report of the Board of Managers of Craig Colony to the State Board of Charities. For the fiscal year ending Sept. 30th, 1896.

The Craig Colony for Epileptics in the State of New York, admitted during its first year of work 145 patients (69 men and 76 women). Several interesting points are referred to. No doubt future reports from this institution will be more valuable than the present one. Could not the learned Superintendent use simple language in his future reports?

That used to describe some matters is not worthy of the earnest work apparently about to be attempted at the institution. To give an example in classifying the causes of epilepsy reference is made to cases arising from injury in the following dropsical style.

"*Traumatic*.—Including cases in which the indenture of the calvarium is maintained, or in which trauma acted more forcibly than a slight determinant to an existing pre-disposition."

In the treatment of the disease special care is exercised in proper feeding. Meat is allowed but once a day. Potatoes, tomatoes, beets and carrots are the favourite vegetables. Cabbage or cucumbers are prohibited. J. S.

The Extra Pharmacopœia. Revised in Accordance with The British Pharmacopœia, 1898. By William Martindale, F.L.S., F.C.S., Member of the Council of the Pharmaceutical Society and late Examiner. Serotherapy, Organotherapy, Medical References and A Therapeutic Index. By W. Wynn Westcott, M.D., London, Coroner for North-East London. Ninth edition. London: H. K. Lewis, 136 Gower St., 1898.

We are pleased to notice the ninth edition of this very valuable little work. The principal changes in this edition are due to the effort to bring the work up to the recent official pharmacopœia. J. S.

Correspondence.

CANADIAN MEDICAL ASSOCIATION.

To the Editors of The Montreal Medical Journal.

Sirs,—There is no man so deserving of a holiday as the hard working physician who has had his nose to the grind-stone from early morning till late at night. It is not only a privilege but a duty to relax one's energies at least once a year and take an outing. Having made up one's mind to go away for a bit, the next question is where to go, for one likes to gain some mental profit as well as physical vigor. This year the Canadian Medical Association offers peculiar inducements to the busy man by meeting in the historic old city of Quebec, on August 17th, 18th, and 19th, next. This will give to the physicians throughout the Dominion, an opportunity to visit, at a trifling expense, one of the most picturesque parts of our own, our native land with profit to himself and benefit to his patients. It too will enable the English and the French to become better acquainted, thus helping to bring about a better understanding of each other.

The President Dr. J. M. Beausoleil is putting forth every effort to make the meeting a success. The local committee of arrangements under the chairmanship of the Vice-President Dr. Parke ably assisted by the local secretary Dr. Marois are doing good work toward making the visit of their medical brethren enjoyable. It has been whispered that a trip to Grosse Isle is probable as a part of the entertainment.

The officers of the Association are confidently looking forward to a large and enthusiastic gathering. For particulars address

F. N. G. Starr,

General Secretary,

Toronto.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXVII. JULY, 1898. No. 7.

THE NEW BRITISH PHARMACOPŒIA.

In this number we publish a review of the new British Pharmacopœia epitomising some of the more important changes to which we desire to call the attention of our readers. By a resolution passed at a late meeting of the Montreal Medico-Chirurgical Society, it was recommended that in this city, after the first day of October, physicians in prescribing should make use of the new Pharmacopœia. The Pharmaceutical Societies of Quebec and of Ontario, have, we understand, also passed resolutions fixing that date for the new edition to come into force. Nevertheless for many months it will be advisable in prescribing preparations, of which the strength has been materially altered, to insert after the name "B. P. 98" to insure accuracy, and prevent possible error. Pharmacists also for some time should carefully calculate the dosage of any prescription in which there may be a doubt as to which edition is employed. All prescriptions written previous to this date should be dispensed according to the older Pharmacopœia, even if they are presented to the druggist many months afterwards. This will involve additional care on the part of physicians in writing and dating their prescriptions, and judgment on the part of the pharmacist in dispensing them. Moreover it will involve the necessity on the part of the pharmacist for some time to keep a double line of many preparations, one representing the formula of the older, the other that of the new Pharmacopœia. The many changes demanded by this new edition may appear for some time as very onerous both to physician and pharmacist. Doubtless from all quarters many will arise to criticize unfavourably special points. Even the members of the committee would scarcely regard this fourth British Pharmacopœia as in all points perfect. Nevertheless we all hail it as representing a great advance upon the last in every department, an advance much greater than was marked by the three previous editions.

We understand that already work is commenced upon the Addendum "in which medicinal plants and other substances suggested for inclusion by Indian and Colonial authorities will be dealt with more fully than has been possible in the present volume." Already suggestions have been invited from Canada.

Divided as our profession is into Provincial Colleges, we have, unfortunately, no official recognition by the British Medical Council, in the same way as have the Medical and Pharmaceutical Societies of Australia and India. The only association that can be officially recognized, and that only by courtesy, is the Canadian Medical Association. We trust, therefore, that at the next meeting in Quebec a thoroughly representative committee may be appointed to act in conjunction, perhaps, with a committee of the Pharmaceutical Society, to take action upon this matter, and determine on a list of Canadian plants and preparations which may be deemed worthy of this semi-official recognition.

THE BACTERIOLOGICAL PRODUCTION OF FIBROSIS.

We desire to draw attention to an important communication made by Dr. Adami in the current number upon the etiology of cirrhosis. A diplo-bacillus differing from the bacteria already known has been found constantly present in a series of cases and, as pointed out, if its *rôle* in the ætiology can be clearly proved by experiment, it will clear up a number of points in connection with this disease not satisfactorily explained by any of the theories hitherto brought forward. A full account of Dr. Adami's later communication will be published simultaneously in this JOURNAL and in the *British Medical Journal*. We hope that Dr. Adami will be led to study the etiology of fibrosis in other organs from the same point of view. His present investigation appears to open up a new field of research in connection with a department of pathology at present very imperfectly understood and in which the current explanations as to causation appear to be illogical and unconvincing. The usual assumption that fibrous tissue spontaneously tends to develop *ex vacuo* is by no means a universal solution of all the problems in connection with fibrosis.

THE CANADIAN MEDICAL ASSOCIATION MEETING.

We gladly call attention to the invitation issued by the Secretary, Dr. Starr, and we hope to see a successful and largely attended meeting. We fear that the intense interest caused by the recent election may have drawn off attention from the meeting up to the present

time, but there is yet sufficient interval to remedy that. Above all it is to be hoped that any personal feeling created by the election may be forgotten, and we must remember that no connection exists between the two events. The Canadian Medical Association is the only link which at present binds together the members of the profession in the different provinces and no consideration whatever should justify those who are members of the Association in any action which might tend to endanger its existence or impair its usefulness.

DR. MONTIZAMBERT AND THE QUARANTINE STATION.

We are much surprised to hear it stated that Dr. F. Montizambert, a man of wide reputation and proved ability, is to be superannuated and replaced by a man of his own age who has had no practical experience whatever in quarantine matters. We trust that so great a blunder may yet be avoided. We would point out especially the danger to the commercial interests of the country in allowing the quarantine service to suffer a change which would lessen the reputation in which it is now held by other countries. We trust that the transportation companies and the commercial world in general, whose interest in the matter is even more direct and personal than that of the medical profession, may succeed in making their influence felt and prevent any such undesirable meddling with the sanitary safe-guards of the country.

TRIENNIAL ELECTION OF THE BOARD OF GOVERNORS OF THE COLLEGE OF PHYSICIANS AND SURGEONS, 1898.

The result of the election held on July 13th was the election of the entire reform ticket by an enormous majority, the total vote cast being 950 out of 1169 licensed physicians who were qualified to vote. The following is a list of the members of the new board with the votes cast for each.

Montreal District.—Beauharnois, Dr. C. Marshall, 905; Bedford, Dr. C. L. Cotton, 900; Iberville, Dr. E. N. Chevalier, 903; Joliette, Dr. M. S. Boulet, 902; Montreal, Dr. T. Cypihot, 903; Ottawa, Dr. E. L. Quirk, 900; Richelieu, Dr. E. H. Prevost, 901; St. Hyacinthe, Dr. E. Turcot, 901; Terrebonne, Hon. Dr. D. Marcil, 903.

Montreal City.—Dr. J. E. Baril, 899; Dr. L. J. V. Cléroux, 901; Dr. J. I. Desroches, 897; Dr. S. Girard, 901; Dr. A. R. Marsolais, 900; Dr. J. A. MacDonald, 903.

Quebec District.—Beauce, Dr. T. Fortier, 899; Gaspé and Rimouski, Hon. Dr. R. Fiset, 903; Kamouraska, Dr. P. E. Grandbois, 900; Mont-

magny, Dr. S. Bolduc, 901 ; Chicoutimi and Saguenay, Dr. Jules Constantin, 903 ; Quebec, Dr. J. A. Ladrière, 905 ; Quebec, Dr. M. Brophy, 902.

Quebec City.—Dr. J. P. Boulet, 904 ; Dr. F. X. Dorion, 902 ; Dr. C. Gingras, 901 ; Dr. A. Jobin, 912 ; Dr. C. C. Sewell, 903 ; Dr. A. Vallée, 904.

Three Rivers District.—Arthabaska, Dr. L. J. O. Sirois, 906 ; Trois-Rivières, Dr. L. P. Normand, 849 ; Trois-Rivières, D. E. F. Panneton, 901.

St. Francis District.—Dr. P. Pelletier, 900 ; Dr. A. N. Worthington, 904 ; Dr. T. L. Brown, 899.

In addition the following physicians received a number of votes not sufficient to elect ; E. D. Aylen, 86 ; A. T. Brosseau, 57 ; J. M. Beausoleil 42 ; E. Laurent, 42 ; A. G. Belleau, 41 ; L. Larue, 38 ; W. A. Verge, 36 ; A. A. Watters, 34 ; C. S. Parke, 37 ; C. Rinfret, 36 ; J. M. Mackay, 35 ; A. Godbout, 35 ; C. E. Vaillancourt, 35 ; P. M. Guay, 35 ; Hon. J. J. Ross, 34 ; L. A. Plante, 37 ; G. A. Lacombe, 34 ; J. F. R. Latraverse, 39 ; L. J. P. Bissonnette, 39 ; S. Gauthier, 42 ; P. Laberge, 36 ; A. P. Cartier, 39 ; H. Cholette, 35 ; J. E. Fournier 35 ; J. O. Camirand, 42 ; L. C. Bachand, 40 ; F. J. Austin, 34 ; Des Grosbois, 26 ; Picotte, 24 ; A. W. Haldimand, 24 ; Bastien, 23 ; H. Trudel, 22 ; A. Simard, 21 ; Robinson, 17 ; P. C. Prevost, 3 ; Brochu, 2 ; J. A. Beaudry 2 ; Faucher, 2 ; Lanctot, 2 ; J. Neill, 2 ; Comost, 1 ; Godin, 1 ; Brunelle, 1 ; Phenix, 1 ; Tassé, 1 ; Bernard, 1 ; Rosconi, 1 ; Rottot, 1 ; Migneault, 1.

The proceedings of the meeting, if boisterous, were none the less impressive, and it is to be hoped that the half dozen loud-voiced individuals, who endeavoured to control the meeting and to prevent half a thousand of the most representative members of our profession from voting on the day of the election, will have learned that the rights of majorities are not to be infringed upon with impunity and that obstructive tactics may do more harm than good.

On the other hand, while the meeting was apparently unwilling to allow Dr. Brosseau and Dr. Marcil to occupy as much time as these gentlemen felt to be necessary in order to rebut certain accusations (which had never been made against them) we are sure that it was because both of them happen to be what we may term so notoriously upright that no one in this Province would for a moment suppose that they could be anything else.

The pleasant and straightforward manner in which the President, Dr. Simard, acquiesced in the verdict of the meeting although adverse to his administration quite won the good will of those present before

the close of the meeting which closed in a very amicable manner by proposing a vote of thanks to the presiding officer.

The new board proceeded at once to elect the following officers: President, Dr, E. P. Lachapelle; Vice-Presidents, Drs. R. Craik and L. Catellier: Secretary, Dr. J. A. MacDonald, Treasurer, Dr. Jobin; and Registrar, Dr. Marsolais.

For the first time in at least nine years the board really represents the wishes of a majority of the profession in the different districts. The electoral committees who have labored for this end are to be congratulated on the result and it must also be said that they have acted wisely as well as consistently in accepting without question the candidates nominated by the districts, and therefore the choice of the local majority.

It will be remembered that both the parties in the recent contest had advocated election by districts and it is to be hoped that all those interested will continue to assist and encourage the new board in their efforts to secure a better election law. It is to be hoped also that in future the profession throughout the province will take more interest in the action of the governing body in the interval between elections than has been the case in the past. It was lack of interest on the part of the body of the profession which brought about the recent deplorable condition of affairs. We trust that the new board may receive the candid criticism of its friends as well as the support of its late opponents whenever the public interests demand it, and that all purely personal questions which have arisen may be speedily forgotten.

GESTA MEDICORUM.

"QUICQUID AGUNT MEDICI NOSTRI FARRAGO LIBELLI."

Prof. William Osler will succeed Prof. William H. Welch as Dean of the Johns Hopkins Medical School in October.

Sir William Hingston at the recent convocation of the Ottawa University, received the honorary degree of Doctor of Laws.

The Toronto Clinical Society has appointed the following officers: Pres., F. LeM Grassett; Vice-Pres., G. A. Bingham; Sec., H. A. Bruce.

Dr. W. A. Feader, Late Senior House Surgeon to the Royal Victoria Hospital, leaves in August for Halle, when he intends to continue his medical studies.

Statues to Skoda and Rokitansky have been erected in the University of Vienna. Addresses suitable to the occasion were delivered by Professors Weichselbaum and Nothnagel.

It is announced that the Thirteenth International Medical Congress will be held in Paris in 1900, under the Presidency of Prof. Lannelongue. The general secretary is Dr. A. Chauffard, 21 Rue St. Guillaume.

Professor Alexander Kolisko so well known to many Canadians as a brilliant teacher of pathology and morbid anatomy has been offered the chair of medico-legal pathology in the University of Vienna. His appointment as Hoffmann's successor is now announced.

Prof. A. von Zenker, of Erlangen, is dead, aged 73. He has been well known as a distinguished pathological anatomist, but has been in retirement for some years. He was the first to draw attention to the chronic pneumonias following dust-inhalation (Zenker's Pneumokoniosis.)

The Toronto Medical Society has appointed the following officers for the coming year : Pres., A. Primrose ; 1st Vice-Pres., F. Oakley ; 2nd Vice-Pres., J. Webster ; Corr.-Sec., M. Currie ; Rec.-Sec., J. N. Brown ; Treas., G. H. Carveth ; Council, W. J. Wilson, J. E. Graham, T. F. MacMahon.

The consolidation of the University and Bellevue Hospital Medical Colleges, of New York, has been consummated, and the 126 professors of the new school announced. Dr. E. G. Janeway will be the Dean. The New York University has received a gift of $50,000 for the Productive Endowment Fund.

During last month the Freedom of the City of Edinburgh was given to Lord Lister. He is also to receive the honorary degree of Doctor of Science next October, by Victoria University, on the occasion of the opening of the new Physiological and Pathological Laboratories of the University College, Liverpool.

Dr. J. Leonard Vaux, of St. Luke's Hospital, Ottawa, has been awarded the gold medal of the Alumni Association of Trinity University, Toronto, for his paper on " Indol, Indican, and Indigo-blue, their Pathological Significance and Clinical Value. The judges were Professors Adami, Wyatt Johnston and Ruttan.

It was decided at the seventy-eight annual meeting of the Pharmaceutical Society of the Province of Quebec to recommend that October 1st be adopted as the date for the coming into force of the new British Pharmacopœia. Dr. T. D. Reed was present as a delegate from the Montreal Medico-Chirurgical Society. Since then the latter society has formally agreed to the date fixed so that the date Oct. 1st, becomes official for the Province of Quebec at least.

The British Institute of Preventive Medicine has now taken possession of its new building, situated on the Thames embankment, near Chelsea Bridge. It is provided with bacteriological, photographic, chemical, vaccine and other laboratories, besides rooms for private research. On the third floor is a lecture room which will accommodate 150. A crematory and animal house are attached. The director is Dr. Allan Macfadyen: the bacteriologists are Mr. R. Hewlett and Dr. Foulerton, F.R.C.S. The chemist is Dr. Arthur Harden.

A meeting of the district of St. Francis Medical Association was held Friday afternoon at Sherbrooke, Dr. Pelletier, President, occupied the chair.

The following officers were elected: President, A. N. Worthington; 1st Vice-Pres., A. G. H. Beique; 2nd Vice-Pres., W. D. Smith; Sec.-Treas., C. J. Edgar; Assis. Sec.-Treas., W. Lemay, and T. L. Browne, C. N. Stevenson, J. O. Camirand; Governors at the next triennial meeting of the provincial board; Drs. A. N. Worthington, P. Pelletier, T. L. Brown.

The semi-annual meeting of the Governors of the College of Physicians and Surgeons of the Province of Quebec took place July 5th, at Laval University. Dr. L. J. A. Simard, President, occupied the chair

The following candidates obtained their license:—Doctors Mande, E. Abbott, Edward Archibald, Geo. E. Beauchamp, E. J. Bedard, Chas. E. Boisvert, J. W. Blanchet, J. J. Benny, Brown W. Kerr, J. A. D. Beaudry, J. A. Corcoran, Thos. J. Curran, M. Chagnon, Cushing Harold, Geo. E. Cartier, Wm. Delaney, W. H. Dalpe, J. A. Darche, Campbell Davidson, Arsene Descoteaux, Louis Doray, F. C. Fraser, W. A. Feader, M. Jos. Eugene Fiset, F. A. Gadbois, V. Gosselin, S. A, Bandall, Jos. C. Gelinas, L. O. Gauthier, H. P. Hudson, Geo. Hume, Grosvenor L. T. Hayes. R. Ashton Kerr, Richard Kerry, Amedee Lassonde, Daniel E. Lecavalier, Ernest Lauzon, H. P. Lavallee, A. Lefebvre, Jos. T. Loranger, John A. McCabe, A. W. McArthur, Jesse H. Macdonald, M. J. Mooney, G. H. Manchester, J. B. Menzies, Eximere Martin, H. R. Macaulay, Edouard Martin, Chas. Ogilvy, Martin Powers, Henri Prevost, H. St. Aubin, J. Clarence Sharp, Oscar B. Stevens, Jas. A. Thompson, Jos. H. Tremblay, Eug. Virolle, F. R. B. Wainwright, John West, Wolferstan Harold Thomas, J. Ernest Pruneau, Henri Alex. Larue, W. Gadbois, J. G. Dequoy, Jos. Nap. Roy, J. P. Aylen, Ulric Geoffrion, D. Chouinard.

The American Medical Association met during June in Denver, Col. In the absence of the President, Surgeon-General Sternberg. Dr. J. M. Mathews, of Louisville, Ky., presided. 1336 members attended.

Among the papers presented were: Differential diagnosis between Yellow Fever and Dengue, H. A. West; The Essential of the Art of Medicine, J. H. Musser; Diabetes Mellitus at the Massachusetts General Hospital from 1821 to 1897, R. H. Fitz and E. P. Joslyn; The Medical Aspect of Appendicitis, H. A. Hare: Indol, Indican and Indigo-blue, their Pathological Significance and Clinical Value, J. Leonard Vaux; Adrenal Tumours of the Kidney, Bayard Holmes: Pneumaturia, Howard Kelly; Neural Dynamics, W. J. Headman.

The following officers were elected: President, Joseph M. Mathews, of Louisville: First Vice-President, W. W. Keen, of Philadelphia; Second Vice-President, J. W. Graham, of Denver: Third Vice-President, H. A. West, of Texas; Fourth Vice-President, J. E. Minney, of Topeka: Treasurer, Henry P. Newman, of Chicago; Librarian, George W. Webster, of Chicago: Chairman of Committee of Arrangements, Stirling Loving, of Columbus, Ohio. Place of Meeting, Columbus, Ohio.

The final meeting of the local executive committee nominated in connection with last summer's meeting of the British Medical Association in Montreal, was held in Montreal on Saturday, July 2nd.

It took the form of a supper at the St. James Club, Dr. Roddick was in the chair, with Sir William Hingston on his right, Dr. E. P. Lachapelle being vice-chairman,

During the evening the treasurer's report was read when it appeared that in all, from every source, a total of $17,500 had been received. After all expenses had been paid a small surplus remained in hand, which had been devoted by the committee to the purchase of suitable souvenirs in appreciation of the labor and services of those who had charge of the local arrangements.

Dr. J. A. Springle, hon.-sec., received a pair of Doulton vases, Dr. Hutchison, a large Doulton vase, Dr. Benoit, a handsome silver mounted set of writing table accessories, and Dr. Adami, a handsome jardiniere.

The Council of the College of Physicians and Surgeons of Ontario opened its Annual Meeting at Toronto, on July 5th. Dr. Thorburn, the retiring president gave the customary presidential address. He closed with the suggestion that a committee should be appointed to consider such means as would tend to create uniform standard in the various provinces of the Dominion. The election of officers resulted as follows: President, Dr. L. Luton, St. Thomas: Vice-President, Dr. W. F. Roome, London: Registrar, Dr. R. A. Pyne, Toronto; Treasurer, Dr. H. Wilberforce Aikens, Toronto; Solicitor, Mr. B. B. Osler, Q.C., Toronto.

Dr. Armour, of St. Catherines, gave notice of the following motion "That this council hereby places on record its willingness to co-operate with the medical organizations of the several provinces and territories to establish an office of Dominion medical registration whereby provincial practitioners may secure the rights to pursue their calling in all parts of Canada, on the following basis: The several provinces shall require a course of professional study of not less than four years and shall have a central examining board before whom all students and applicants must pass before receiving provincial registration. All provincial licentiates of five years standing shall be entitled to Dominion registration." It is learned that the council has again declared against reciprocity.

On Monday, June 27th, was held the last meeting for the season of the Lister Laboratory Club. This is a society started among the younger members of the teaching staff who are specially interested in laboratory work. The meetings so far have been well attended and the material provided has been excellent. For a new departure its success is very gratifying.

At the last meeting Dr. J. G. McCarthy demonstrated a hitherto undescribed appearance in the structure of the Hippocampus Major of the human brain. His investigations are to be published *in extenso* at the approaching meeting of the British Medical Association in Edinburgh.

Dr. A. Bruêre showed a series of preparations stained by various selective stains for fat, such as Sudan III, Sudan yellow, indulin, quinolin blue, and osmic acid. He was of the opinion that the best results were obtained by the use of Sudan III. He found that like quinolin blue this stained myelin.

Prof. J. G. Adami gave a demonstration of specimens of liver and lymph glands in Pictou cattle disease, showing the characteristic micro-organisms. Also specimens from progressive atrophied cirrhosis in man showing a somewhat similar organism.

Dr. Morrow read a communication upon certain rare cases in which he had found that after boiling saline for a short time its diastatic properties had not been destroyed. He enumerated the precautions to be taken to ensure that the saline had been really boiled.

Dr. MacTaggart and others showed morbid specimens.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXVII. AUGUST, 1898. No. 8.

Original Communications.

UPON THE BACTERIOLOGY OF PROGRESSIVE CIRRHOSIS OF THE LIVER.

BY

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It is needless for me here to enter into a discussion of the various theories which have been adduced to explain the development of cirrhosis of the liver. I need only say that the experience of a large number of observers, who for weeks and months have inoculated and treated animals with various alcohols has shown that alcohol itself induces at most the fatty liver with, it may be, a very slight amount of fibroid change in the portal areas, and that not a single observer has by this means been able to produce anything at all resembling the extreme deposit of fibrous tissue which we meet with in the hobnailed liver.

Alcohol in the main leads to the fatty liver, while on the other hand the evidence has steadily accumulated, notably in India, that extreme cirrhosis may attack children and adults who have not taken a particle of alcohol either medicinally or otherwise.

Within the last few years, the French school of pathologists headed by Hanot, has regarded the enlarged cirrhotic liver with jaundice as being of infectious origin, and it is common in France, now-a-days, to speak of "*le foie infectieux*," but to the best of my knowledge no one has as yet described any one micro-organism as being found frequently associated with these cases of so-called infectious liver. At

[1] A paper read for the author by Professor Osler, in the Section of Medicine, at the meeting of the British Medical Association at Edinburgh, July, 1898.

most, Levi[1] from a case of cirrhosis in a 17 year old male, with marked periportal fibrosis and enlarged spleen, obtained a diplococcus pathogenic for guinea pigs. The age of the patient, the proliferation of the bile ducts and the absence of ascites, would indicate that his case was one of what is termed " Hanot's Cirrhosis" but the bacteriology is rendered somewhat doubtful in that there were also present bacterial endocarditis of the pulmonary valve and suppurative meningitis. Unfortunately I have not been able to obtain the original paper, nevertheless, this brief statement of the main features of the case, makes it at least possible, as Paltauf has urged, that the endocarditis and meningitis and the presence of diplococci in all the organs, may have been due to a complication.

On the other hand there is a somewhat suggestive relationship between these cases of Hanot's cirrhosis and epidemic jaundice, in some cases of which observers have noticed the presence of a diplococcus or bacillus with polar staining.

To the best of my knowledge, no one has as yet recognised the frequent presence of any one form of micro-organism in the commonest form of hepatic cirrhosis—the so-called portal cirrhosis, tending to the production of the hobnailed liver, with or without marked atrophy of the liver.

On behalf of the Government of the Dominion, I spent the summers of 1894 and 1895 in Nova Scotia investigating a very remarkable disease affecting the cattle in a limited area of the country—the so-called " Pictou cattle disease"—of which the main lesion is a singularly extensive cirrhosis of the liver. The disease is only found in a district spreading along the northern coast of the peninsula, in a tract of country about 40 miles long by from 5 to 12 miles broad. There apparently it has been noticed for some 40 years, now at one end of this area now at another. The disease would seem to be very chronic and not to affect all the cattle on a farm simultaneously, but unless due precautions are taken, in the course of three or four years most of the animals upon a farm will, one after the other, be affected. It would seem further that the disease does not spread directly from animal to animal, for there appears to be no special incidence of cases following upon the long winter sojourn of the animals in the byres, which, with rare exceptions, are miserably dark and ill-ventilated, the attempt being to keep these as warm as possible in consequence of the severity of the winter.

One or two cases are on record in which the disease has broken out in a neighbourhood after the body of a cow affected with the disease

[1] Arch. Gen. de Med., March and April, 1894.

has been washed down by one of the streams and stranded upon the farm lands. The gradual extension from farm to farm, through any given district, seems to be largely brought about by the fact that each farm has at the back of it a belt of woodland into which the cattle roam during the summer. The belts are badly fenced off from each other, and here, if an animal is affected, it attempts to wander off into the woodland and there die in some remote corner. Thus, unless precautions are taken, the carcasses of these animals remain uninterred and appear to act as centres of infection. Under the present Government regulations, notification is given of every suspicious animal, and the Government Inspector, if satisfied that it is a case of the disease, immediately destroys the beast and burns the carcass, or has it buried in quicklime. By this means the number of animals affected is rapidly being reduced, so that within the last few years the number of cases occurring annually has sunk from 150 to under 30.

As for the symptoms of the disease, the first symptom which is noticed is that the milk has a somewhat acrid odour upon boiling and acquires a pecular bitter taste ; within a few days the animal becomes dry, it is weak and restless, the coat stares and the limbs are dragged, the bowels loose, the abdomen a little swollen, the eyes are staring, the conjunctivæ subicteroid. The animal becoming weaker and weaker dies apparently in a condition of complete exhaustion. In some few cases death is preceded by a period of intense excitement almost maniacal in character, the animal rushing about charging at obstacles and then falling into a condition of paresis followed rapidly by death.

I killed and made post-mortem examinations upon some 30 animals during two years and found, as Dr. Osler and Dr. Wyatt Johnston previously determined, that the main lesions are an extreme condition of generalised cirrhosis, not only periportal and pericellular, the organ being somewhat enlarged and having a smooth and rarely a finely granular surface. There is evidently an abundant production of thin bile, for with scarce an exception the gall-bladder was found very full and the fæces well stained. The periportal and abdominal lymph glands in general are large and succulent, there is a moderate amount of ascites, the fluid being perfectly clear and limpid, and together with this there is a rather remarkable condition of a gelatinous œdema of the mesenteries and intestinal walls. A further constant lesion is the presence of numerous follicular ulcers in the 4th or true stomach. These, save in the very acute cases, are found in a cicatrised condition, giving strongly the impression that the earliest

lesion in the case has been gastric and has been followed by infection of the abdominal lymphatic system and the portal area.

From all the animals which I killed, I was more fortunate than my predecessors in gaining a characteristic micro-organism. This may have been due to the fact that I employed a somewhat different method of gaining my cultures. Instead of taking the media and inoculating on the spot, all I employed was a series of sterilised glass pipettes in which I collected relatively large amounts of the juices of the various organs ; ascitic fluid, blood, etc., and then when back in my temporary laboratory, either upon that or the following day, I inoculated my media. By this means, constantly from the lymph juice of the abdominal glands and from the liver juice or bile and more rarely from other organs and fluids, I obtained in each case growths of a characteristic micro-organism ; small, polymorphous, at times appearing as a diplococcus and at others as a diplobacillus which by its polymorphous character gave me a considerable amount of trouble, until I found that employing the same broth tube, at the end of 24 hours I obtained the one form, at the end of 48, the other. Further study showed me that this micro-organism was in reality a short bacillus with polar staining, in this resembling to some extent the micro-organisms of hæmorrhagic septicæmia in the lower animals, but unlike them, possessing a slight capsule. I was able to grow this upon all the ordinary media of the laboratory. Into the character of this micro-organism I will not here further enter, beyond stating that I found it pathogenic for rabbits, guinea pigs and mice, rabbits dying in from 15 to 35 days, guinea pigs in from 30 to 35 on the average.

The characteristic features of this disease—the ascites without jaundice, the gastric and intestinal disturbance and the condition of the liver—led me seriously to consider the points of similarity between the course and symptoms of these cases and those present in portal cirrhosis in man, and though it may seem a small matter, I was especially struck by the fact that the first post-mortem which I performed upon a case of atrophic cirrhosis upon my return from Nova Scotia in 1895, presented the same gelatinous œdema of the mesenteries and intestinal walls which was so prominent a feature in the Pictou cattle disease.

Thus on and off for the last three years my attention has been directed towards this possibility of discovering bacteria in ordinary progressive portal cirrhosis. Upon three occasions I have thought that I have gained specific micro-organisms. In two, unfortunately, the growth became contaminated with the colon bacillus, and as this occurred on the eve of my vacation I was unable to continue the

search further. In the third, which occurred a little over a month ago, the growth was very slight, and although pure, it had apparently died out on the fifth day and I was unable to gain any further cultures, if indeed what I saw was anything beyond the frequent presence of diplococci already existing in this liver juice at the time of extraction.

The difficulty that has pursued me in this search has been that which has prevented me from publishing so far any extensive report of my studies upon the Pictou cattle disease, namely, the extraordinary difficulty in staining the micro-organism in the tissues. I have tried a very great number of methods, and while with many I have been able to recognise the bacteria, the results obtained have been so inconstant that I have felt that others following me might very possibly have negative results; thus I have been unwilling to make any full statement until I should be able to state clearly how to be able to recognise the micro-organism. While this micro-organism stains deeply it appears to lose its stain even more rapidly than does the tissue. Sometimes Gram's or Weigert's method shows them perfectly, but while the iodine appears to have a deterrent effect upon the decolorisation of the microbes, the stain is not properly fixed by its means. And while again I have obtained good results by staining with methylene blue dissolved in anilin oil, a momentary passage of sections so stained, through a mixture of anilin oil and xylol and so through xylol into Canada balsam, yet even here the colour appears to fade out rapidly so that in a few days the micro-organisms are unrecognizable. Eventually the thought struck me that bleaching in the sunlight might be a possible means. By this process there would be no diffusion currents set up, and if, as my previous work had shown, the bacilli took up the stain with rapidity then the deeply stained sections would have so much of the dye in the bacilli that, upon bleaching out, the bacilli would be left stained when the tissue itself had become colourless.

My laboratory assistant, Mr. E. W. Hammond, prepared a large series of sections in this way and obtained some excellent results. He found that, as I had suggested, strong staining with carbolised fuchsin followed by bleaching for a short time each day for a period of a fortnight or more, demonstrated the bacteria admirably. While the process is a slow one it has the undeniable advantage that each day the mounted section can be examined to see how far the process of bleaching has progressed. By this means I was able to find out that in the Pictou cattle disease the micro-organisms, while present scattered through the new fibrous tissue, are present also in large numbers

within the liver cells, and in the liver of a rabbit which had been inoculated with the micro-organism isolated by me, although the animal died before any marked cirrhosis had developed, the liver cells were seen to contain these microbes in very great numbers. As to how the micro-organisms enter these cells, that is a point on which at present I can throw no light, but the appearances given, as will be seen in a specimen under the microscope in the Pathological Exhibit, is that these cells contain large numbers of extremely minute diplococci.

Recently, within the last month, a remarkable case of cirrhosis with pigmentation unaccompanied by diabetes has again drawn my attention to the bacteriology of atrophic cirrhosis. Dr. Maude Abbott, who is working in my laboratory at the Royal Victoria Hospital, showed me some sections of the abdominal lymphatic glands, stained by Weigert's fibrin stain in which, under high power, I noticed a peculiar fine granulation, and upon examining under the 18th inch immersion, these fine granules resolved themselves into minute diplococci.

Examining the liver stained the same way, I there noted large numbers of the same micro-organism, and since then I have gone through all my five cases of cirrhosis which I have had during the last three years ; through specimens of four well marked cases of hobnailed liver received from Professor Hektoen, of the Rush Medical College, Chicago, and through a series of sixteen livers, some of well marked atrophic cirrhosis, others of milder stages of cirrhosis sent to me by Dr. Flexner from the Johns Hopkins Hospital. So far in every case of well marked portal cirrhosis whether of the small shrunken type or of the large hobnailed type, whether associated with jaundice without ascites or with ascites without jaundice, I came across constantly one characteristic form of micro-organism, obtaining the best and most permanent results by the method already mentioned, of staining in carbolised fuchsin and bleaching or partially bleaching in the sunlight.

This micro-organism is extraordinarily minute ; by the trained eye, in well stained specimens, it can be recognised under the 12th inch immersion, but for satisfactory work it is absolutely necessary to employ the 18th or 20th inch immersion lens. According to the depth of the stain, so does it appear either as an ovoid bacillus, which might easily be mistaken for some stained deposit in the liver cells, or as a minute diplococcus surrounded by a halo, the explanation being that with strong staining the the bacillus and capsule are stained throughout, with weak, the body of the micro-organism and the capsule are decolorised, leaving simply the polar staining. Even in the tissues

this micro-organism is somewhat polymorphous, that is to say, that at times one sees the two stained portions so close together as to resemble a minute edition of the gonococcus, at other times they are further apart and appear rounded like the coccus form of pneumococcus, while in the same specimen a rare form may be seen in which the two stained portions are even slightly elongated. These are present in greatest numbers within the cells. A remarkable feature about them, and one which years ago I noted in connection with the Pictou cattle disease, is whether they be seen in the lymphatic glands or in the liver, in the unstained condition many have distinctly a brownish tinge, so that in the liver especially these bodies may at first sight be mistaken for minute granules of precipitated bile pigment. They vary in number; in two cases in which the disease appeared to be of very slow progress but few were present: in those cases in which the bands of portal connective tissue showed an abundance of small round cells and in which the disease according to all indications was active and progressing, the number was remarkable, in fact so numerous were they that it was impossible for me to arrive at any other conclusion than that there is a distinct association between the presence of this micro-organism and the development of the disease.

So minute are these micro-organisms that it is difficult to focus them, and I would strongly urge those attempting to confirm these observations to take, if necessary, from twenty minutes to an hour studying an individual field of the microscope before arriving at any definite conclusion.

Here, perhaps, I should correct myself. In the fully stained condition the micro-organisms while small are not so very much smaller than the ordinary run of pathogenic bacteria. But in this fully stained condition, as already stated, they are very difficult to distinguish from granules scattered through the cell protoplasm; it is in the partly decolorised condition in which the polar staining alone is recognisable and is peculiarly characteristic, that they appear so very minute. Indeed, I know of no form so minute, save that recently described by Nocard and Roux as being the causative agent in the contagious pleuro-pneumonia of cattle, and the strain upon the eyes in studying these microbes is most severe. This adds greatly to the difficulty of photographing the micro-organisms.

I am indebted to Dr. Patrick, the photographer of our hospital, for the accompanying lantern slides, in which despite great difficulties he has managed, I think successfully, to demonstrate the organisms in the tissues; but with regard to this I may say that where he shows

on a micro-organism the slightest change of focus would bring others into view, so that his slides show but about 1-20th of the number recognisable in any given field.

As to whether the micro-organisms in the human and in the bovine liver are identical, it is impossible for me to affirm. At Johns Hopkins, as in our own hospital and in a large number of foreign hospitals, not to mention the leading hospitals in the old country, it is now the custom to obtain cultures from half a dozen or more regions, including the liver, in every autopsy performed within fifteen hours after death. And, while the methods employed for obtaining cultures are in many cases faulty, to the extent that an insufficient amount of tissue juice is taken, it seems to me unlikely that had this form been cultivable upon the ordinary media, it would not before now have been isolated. Nevertheless, there is this to be said, that very frequently the colon bacillus grows upon cultures made from the liver: isolated colonies of the micro-organisms from the Pictou cattle disease, while growing more slowly, are not unlike those of the colon bacillus, and thus possibly the micro-organism if growing in a manner similar to that of the Pictou cattle disease, might be neglected on account of this similarity in appearance.

It so happens that here in Montreal cases of the disease are few and far between; five cases only have come under me in four years, and in a series of 934 autopsies made during twelve years at the Montreal General Hospital and indexed by Professor Wyatt Johnston, I find that altogether 31 cases of cirrhosis of the liver are recorded and 14 of the cirrhotic and fatty liver, with one recorded as "hypertrophic cirrhosis." I have thus thought it wise to publish these observations, even though I can at the present moment make no absolute statement with regard to the isolated micro-organism and its character, beyond the statement that, as already mentioned, in one agar tube made from the live juice, I was able to recognise the form, although in not very great numbers and with the absence of any visible growth.

Lastly, as to the cases in association with which I have found this micro-organism. If future observers confirm the observations given above, then we must conclude that many of the divisions and distinctions attempted to be drawn between the forms of advanced cirrhosis of the liver, must be broken down for, in the first place, I have found the same appearance in the large liver with moderate granulation or slight hobnailed condition, which some would speak of as "hypertrophic cirrhosis," as again in the small contracted typical hobnailed liver; in cases frankly multilobular with sharply defined bands of connective tissue cutting off relatively large areas of liver substance

and showing relatively few bile ducts : as again in cases of the more unilobular type with ill-defined edges to the lobules and abundant bile ducts ; in cases which have shown jaundice without ascites, ascites without jaundice, and again both jaundice and ascites ; lastly, in cases with a pronounced alcoholic history and others in which no history of alcoholism could be obtained.

I am far from wishing it to be understood that I am here laying down that all cases of fibroid change in the liver present these minute micro-organisms ; to make any such suggestion would be absurd. Nor again am I prepared to say that Hanot's cirrhosis affecting the young adult and presenting the enlarged liver with smooth surface and accompanying this, crises of icterus, is identical with the more ordinary form of progressive cirrhosis affecting the adult. It may be so or it may not. All that I at present am prepared to lay down is this, that the progressive and extensive cirrhosis affecting the adult at or after forty years of age is, according to my investigations, accompanied by the presence in the liver cells, as again in the newly formed connective tissue, of an extraordinarily minute bacillus, having a polar staining and resembling greatly in its appearance under the microscope a form which I have isolated from cases of infective cirrhosis among cattle.

I cannot conclude without again expressing the debt under which I labour to several helpers. To Dr. Maude Abbott and Dr. Patrick ; to my Laboratory Assistant at the University, Mr. E. W. Hammond, who aided me very materially in Nova Scotia ; Mr. Howell, my assistant at the Royal Victoria Hospital, but for whose energy I should have been unable to prepare and examine all my material ; to Mr. Nicholson, who has most gladly crossed the Atlantic to demonstrate my specimens during the course of the meeting ; and above all, on this occasion am I indebted to a member of McGill University, my predecessor not only in the teaching of Pathology, but also in the investigations in the Pictou cattle disease, than none, not even myself could more willingly or more appropriately, or better, have brought this subject before you.

Appendix, (July 12th, 1898.)

By a remarkable coincidence, upon the afternoon of the day upon which I completed the dictation of the foregoing in order that I might have it complete for Dr. Osler to take with him to Edinburgh, I was called to perform a post-mortem upon a case apparently of heart failure which turned out to be one of atrophic cirrhosis of the liver. I should here add that a diagnosis of cirrhosis of the liver had been

considered and had been left in doubt ; while clearly, from the condition of the heart, death had resulted from failure of that organ.

Not to enter too fully into the details of the case, for the clinical notes of which I am indebted to Dr. James Stewart, I may say that the body was that of a female of 56, who had always lived in Canada, and who, after the diseases of childhood had, until two years previously, enjoyed good health. She had 10 children with no miscarriages, and there was no history of inherited disease. She gave a moderate history of alcoholism, stating that she chiefly drank beer, but if one may base any argument upon the frequent presence of minute whitish plaques which were found scattered along the œsophagus, she was a pronounced alcoholic.

For the last two years she had not been well, dating her impaired health from a fall while out walking, when she injured her back somewhat. For the last year her heart had been very weak and upon exercise her feet and legs became swollen. Since last April, the weakness, swelling of the legs and abdomen, shortness of breath and palpitation have been much worse, and for three days before admission, dyspnœa, sleeplessness and weakness had been extreme, while for months she had steadily been losing flesh.

Upon examination she was found sallow, with moderate anæmia of mucous membranes, the sclerotics were icteroid with distension of the superficial vessels ; the face was emaciated and there was orthopnœa ; the temperature was normal, the pulse rapid and the respirations were 36. The skin, more especially the face, neck and arms, was of a peculiar ashy colour ; this, she stated had been noticeable for some years ; there was slight general œdema, marked œdema of the lower extremities, and definite ascites. The pulse was 100, very irregular in volume and rhythm ; the apex beat was unrecognisable ; there were no murmurs. There was evidence of right-sided pleurisy and numerous coarse and fine râles with expectoration of frothy mucus. There was frequent vomiting and retching, though this had begun only a few days before admission to hospital. The urine was dark, amber coloured, with flocculent sediment, a fine ring of albumin and contained some bile. For a week or more her condition improved ; the heart became more powerful, the ascites diminished. Suddenly upon the 6th, the patient died.

The autopsy was held six hours after death, and showed the following conditions .

Heart.—Large, full, with dilatation of the cavities, the muscle being somewhat atrophied and fibroid. The coronary vessels were atheromatous. All the valves were normal and in both auricles were puri-

form and breaking down ball thrombi indicating a very feeble circulation.

Lungs.—Both showed adhesions to the diaphragm and elsewhere, and on section presented little beyond œdema, save that the lower lobe of the right lung was almost completely compressed and airless as a result of the right-sided pleursy. The right pleural cavity contained about 700 ccm. of red stained fluid without flocculi.

Abdomen.—The abdomen contained between 900 and 1,000 ccm. of turbid and greenish ascitic fluid. Neither liver nor spleen were visible.

Stomach.—This was long and narrow with mucosa thickened, the cardiac portion having a curious strawberry-like appearance with fine white dots standing out, but not projecting from the generally reddened surface. This faded off in the pyloric portion of the stomach where there was a fair amount of mucus.

Duodenum.—The first three inches presented an identical strawberry-like appearance to that seen in the cardia.

Intestines.—The small intestines in general were congested and the last three inches before the ileo-cæcal valve showed large prominent solitary follicles. The walls of the small intestine had a distinctly brownish tinge as of von Recklinghausen's Hæmochromatosis. The mesentery of the small intestine was distinctly fatty and swollen, and upon section abundant milky lymph poured out wherever it was cut.

The abdominal lymph glands were in general reddened and succulent. The retroperitoneal glands, especially those in the neighbourhood of the portal fissure and of the pancreas, were markedly enlarged.

Liver.—The liver was distinctly small, weighing 1045 grams or a little over two pounds; the two lobes were correspondingly diminished in size, the organ was pale and had a finely granular surface; there were abundant old fine veil-like adhesions over the upper surface to the diaphragm. On section the organ cut fairly firmly more especially along the lower half of the right lobe and the under surface. On the whole the appearance on section was more fatty than fibroid. Microscopically, the organ presented along with fibroid thickening of the portal sheaths, a somewhat diffuse cirrhosis, the bands of fibrous tissue not being sharply cut and being infiltrated with a considerable number of small round cells. The cirrhosis was very obvious but not of the more usual type and the diffuse nature of the change may explain why the surface was finely granular rather than distinctly hobnailed.

Gall Bladder.—This had œdematous thickened walls.

Spleen.—Of normal size and rather soft, although on section the trabeculæ were seen larger and more prominent than usual.

Pancreas.—Voluminous and moderately firm.

Suprarenals.—Of fair size.

Kidneys.—These were the hog-backed type of mixed interstitial and parenchymatous nephritis. This so-called 'hog-backed' appearance, is that which, as I believe, Formad of Philadelphia, was the first to point out, is the more common form of alcoholic kidney in North America. The organs were large with a finely granular surface and full and firm cortex. There were white infarcts both in the kidney and the spleen.

The body was still warm at the time of autopsy and I obtained numerous sterilised pipettes of tissue juice from the liver, spleen, kidneys, abdominal lymph glands, ascitic fluid, pleural fluid, pericardial fluid, blood, and lymph from the mesentery, and with these made a series of inoculations on the surface of sloping glycerinated agar tubes, as also some into broth.

Portions of the collected ascitic and pleural fluid were centrifugalised, the cellular debris dissolved by caustic potash and after further centrifugalisation the deposit examined under the microscope after staining with carbolised fuchsin. This deposit showed rather rare minute diplococcus forms with a slight halo round them, similar in all respects to those recognised in the tissues.

A series of slide preparations were made from the various pipettes direct, fixed in the usual method and stained with carbol fuchsin, which was warmed until definite vapour was given off, then washed with water just cool enough to bear the hand in it, and mounted. As a result the characteristic diplococcus form was found in the preparations made from the liver, lymph from the mesentery, the ascitic fluid, the heart blood, the left kidney and the mesenteric glands; they were not found in the pleural cavity, the bile or the pericardial fluid.

Next, using a fair amount of the fluid out of each pipette, I allowed this to flow over the surface of slanting glycerinated agar tubes, my experience with the Pictou cattle disease having shown me, that while the fluid in the pipettes could show numerous diplococci, apparently the majority of those are dead, and only a few remain alive. By this means, in 24 hours I obtained fairly frequent growths in tubes from the spleen and left kidney, and rare growths in the mesenteric glands and heart blood. Four colonies only appeared upon the tube prepared from the liver, and two from the ascitic fluid and these latter did not show clearly till the expiration of 48 hours.

Subcultures made again directly upon the glycerinated agar surface,

showed a fine rather thin growth at first of minute discrete colonies; later these ran together into thin waxy lines which upon the expiration of four or five days assumed a faint yellowish tinge. Other tubes were made directly from the pipettes of the kidney and spleen into beef broth. This upon the following day showed a faint turbidity, which, just as in the case of the Pictou cattle disease, if anything, lessened with further growth, while a whitish deposit formed at the bottom. Since then, using the remaining pipettes, I have obtained a great number of broth cultures, the growth being much more free upon this medium than upon the agar, and further, yielding forms which are more characteristic and less liable to cause confusion: for the micro-organism is most remarkable in its characters.

Grown upon broth, in 24 hours it is present in the form of minute diplococci surrounded with a faint halo or capsule. Often these tend to be arranged in irregular chains in which the separate appearance of the dots are not quite regularly arranged, the long axis joining the two dots not of necessity coinciding with the long axis of the chain.

Grown upon glycerinated agar, the appearance is most puzzling, and although I had similar experience when working out the character of the micro-organism of the Pictou cattle disease, these agar cultures have given me a week of profound anxiety, until within the last 24 hours I have solved the problem. A 24 hour culture at 37° upon glycerinated agar, reveals minute forms which upon careful staining with fuchsin, not too deep, are clearly forms of diplococci. One gets every transition from the frank diplococcus form through one in which only very careful focussing shows that the somewhat oval bacterium has at either pole a deeper stained mass, to forms in which the polar staining cannot be made out so that one appears to deal with true short bacilli. Add to this, a certain number of oval forms can be seen still smaller than the diplococcus, in which the distinction between the two ends cannot be made out.

In 48 hours, and still more in 72 hours, the same culture which had given this appearance at the end of 24 hours appears to be contaminated by the presence of long distinct bacilli: that is, if sections be well stained with fuchsin, while this is still more the case after staining with Loeffler's methylene blue. At first sight, a culture from this variety showing these bacilli of irregular length with rounded ends, often lying side by side, appears to be undoubtedly of the colon bacillus or some allied form. And here I gain an explanation of the contrary results obtained by a bacteriological *confrère* and myself in London two years ago. I took to him cultures isolated from two cases of cirrhosis which, on examination in Montreal, seemed to be

diplococci, and his statement that he found only colon bacilli made me cease my investigations for the time. I can now well understand his most pardonable mistake.

Yesterday upon examining the agar plate culture from the spleen which had been made upon the 7th inst, and had been left for 24 hours in the incubator and there apparently yielded no growths and which thus had remained for four days at the ordinary temperature in the shade, I recognised one form of growth alone present, extremely minute, the colonies well separated from each other.

Upon removing one colony and making a coverslip preparation stained with fuchsin, I found that I had to deal with long chain-like bacilli interspersed with some shorter forms of the same breadth. The appearance was so wholly unlike anything that I had previously made out in the broth cultures, that I neglected this colony and made a culture from another identical in appearance and equally isolated, and in this case after staining with fuchsin, and as I thought over-staining, I washed in absolute alcohol. The result obtained was most remarkable. The long bacillary forms could still be recognized in this as in the other specimen and if anything they were longer, but each long filament showed a discoloured sheath in which, scattered at perfectly regular intervals, were pairs of dots deeply stained. In some places individual dots could be clearly recognised elongated and replacing the pairs. These pairs of dots in size resembled the diplococcus-like forms seen in the broth cultures and in the tissues to which I have already so frequently drawn attention. I regret that time has forbidden that I should obtain photographs of this very curious appearance so that they could be demonstrated with the lantern. In the series of preparations which will be found in the Pathological Museum, this form will be placed under the microscope and there will also be a series of sketches made by me under Zeiss's Camera Lucida showing this appearance.

I touched the same colony with a platinum needle and inoculated a broth tube from it and eight hours later, the broth, which had in the meantime been kept at 37°, showed a faint turbidity, and now some specimens treated with carbolised fuchsin in the same way, showed in place of the singularly long filaments, numerous diplococcus forms, fairly large, in which the connecting more colourless portion could be well seen, while here and there a rarer form showed three instead of two dots along the course of the bacillus. These observations satisfactorily explain the curious condition of affairs.

The microbe which is seen in the tissues as a diplococcus surrounded by a faint halo, is in broth after 24 hours present also as a diplococcus

but rather larger, showing or not showing the halo according to the extent of the stain.

Upon agar agar, while first present as a diplococcus form, it gradually extends and each day is seen as a longer bacillary form, but if stained and decolourised with carbolised fuchsin and decolourised to the right extent, each long filament is seen to be made up of diplococcus-like members lying in the common sheath. I made out a similar condition of affairs in connection with the Pictou cattle disease, but do not remember to have come across such long fillamentous forms.

We seem thus to be dealing with a form totally unlike any which to the best of my knowledge, has been described; the polymorphism is remarkable. It is most difficult, however, to determine how to describe the appearances seen, and I am at a loss whether to state that we are dealing with an encapsuled diplococcus or with a bacillus having inclusions taking a peculiar deep staining, just as in the ordinary cell, the nucleus stains deeper than the surrounding protoplasm. The general appearance in the tissue is certainly that of an encapsuled diplococcus, but on the other hand, grown outside the body and upon agar and then treated with Loeffler's methylene blue, the whole of that portion which plays the part of a capsule to the diplococci takes on a stain with as great intensity as do ordinary bacteria. On the whole at present, I am inclined to the latter view, because examining tubes in which proliferation is most rapidly proceeding, I find upon staining with carbol fuchsin and decolourising with alcohol, that one has in the youngest ovoid forms what is most suggestive of the polar staining such as one sees in the bacteria of hæmorrhagic septicæmia, that is to say, there is at either pole not a complete coccus form, but a generally deep staining concavo-convex segment, the two parts being separated by a clear space and the membrane joining the ends of the opposite crescents being clearly visible.

If this form coincides in other respects with the micro-organism of Pictou cattle disease, it will grow rather more easily upon slightly acid media, it will grow upon serum and very slowly in gelatine without marked liquifaction, and will be fatal for animals of the laboratory at a relatively long period after inoculation.

It so closely resembles the micro-organism of the Pictou cattle disease that I feel that I may safely prophesy this, for the time taken in unravelling the mutability of growth upon agar agar has prevented me from working out these points till the last few days.

The great similarity in appearance presented by growths upon agar agar under ordinary staining to the colon bacillus may perhaps make

it necessary to say a few words about the relationship of the micro-organism isolated by me, to the bacillus in question.

I have made growths side by side, and find that in broth the colon causes a greater turbidity and appears to grow more freely upon agar agar and also to be endued with greater motility. While upon staining an 18 hour broth culture of the micro-organism by the Nicolle Morax method, in order to demonstrate flagella, I found that the micro-organism, which are even stumpier than the colon bacillus, under similar circumstances to be possessed of terminal flagella, either one or two, and not of lateral. This, if it were necessary, would seem distinctly to prove that the micro-organism is wholly distinct from the colon group. However, I make this statement provisionally, and will give fuller details as to the characters of the micro-organism within the next few months, probably in the *Journal of Experimental Medicine*.[1]

I trust, however, that I have said sufficient to prove: 1st, That in at least a very large number of well-marked cases of progressive cirrhosis in man, there is to be found largely within the liver cells, also in the lymph spaces in the newly formed connective tissue, a peculiar and very minute form of micro-organism, present on staining to the proper extent, as a diplococcus surrounded by a faint halo, or when stained deeply, being a rather obscure bacterium, which may easily be mistaken for stained deposits within the cells.

2nd. That in the infective cirrhosis of cattle, a very similar micro-organism is recognisable, present in like positions within the tissues and showing similar appearances when stained.

3rd. That from at least 30 cattle affected with this disease I have been able the isolate the micro-organism—from the liver, bile, abdominal lymph glands, and in some cases from the various organs of the body.

4th That the micro-organism isolated is a polymorphous micro-organism, appearing as a small diplococcus when grown in broth, tending to assume a distinctly bacillary form when grown for a few hours on other media, or in broth for a longer period.

5th. That this micro-organism is pathogenic for the animals of the laboratory, and that in them it is to be recognised within the hepatic cells as in other regions.

[1] August 20th.—Fuller studies have shown me that these statements need amending. While the bacilli at first caused no fermentation of glucose and lactose broths, later growths gave definite gas production, though not so extensive as the atypical colon bacillus. The broth growths also remain atypical, but undoubtedly the bacilli when growing freely have, like the colon bacillus, lateral flagella. The germ belongs to the colon group. Fuller details of its characters will be given in a later communication.

6th. That from a case of distinct atrophic cirrhosis in the human being, I have been able to isolate from various organs of the body a similar micro-organism, which grown in broth has a diplococcus form, grown upon agar, is present as a short or longer bacillus according to the age of growth.

This is not the occasion for me to discuss at length the bearing of these observations upon the nature of progressive cirrhosis in man. It is only necessary for me to say that if they are confirmed, as personally I feel they must be confirmed by everyone who proceeds with sufficient caution to follow the methods employed by me, then cirrhosis of the liver assumes an entirely new aspect. We gain a satisfactory explanation at once of such phenomena as the enlargement of the spleen, which, as has already been noted by more than one observer, may be made out before there is any sign of portal obstruction: we see why so frequently there should be right-sided pleurisy, and may even find that the question as to whether a case is complicated with ascites or jaundice, depends upon this micro-organism: depends upon whether it sets up a low inflammation of the peritoneum, or whether it more especially affects the liver cells and bile ducts: while disturbances which may occur not immediately in connection with the liver, in the pancreas and in the kidney, would seem to gain a possible explanation from the fact brought out by me, that this micro-organism, common in the liver cells, is in an advanced case to be gained from the heart blood and from the kidney.

That the micro-organism only causes cirrhosis, I do not believe; indeed, we may find that it is the cause of more than one disturbance in the liver, and indeed in other organs. This I base upon the fact that in the case in which I have isolated this allied form from man, the micro-organism shows itself capable of existing in several regions of the body; in fact of setting up what bacteriologically we regard as a septicæmic condition.

The illustrations referred to together with a further note on the subject, will appear in the next number of the JOURNAL,

UPON THE SO-CALLED STRUMA SUPRARENALIS SARCOMATODES ABERRANS.

BY

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I have to thank Dr. James Bell for access to his records for the following clinical history:—

The patient a man aged 48 years, has had four distinct attacks of hæmaturia, the first in 1893, the others in the Autumn of 1897, in February 1898, and in April 1898, all lasting a few days and gradually passing off. There is a distinct history of a renal calculus in 1893 and a probable one in 1897. The tumour was first noticed in February 1898, and was very marked after the attack of hæmaturia in April last.

A preliminary operation was performed in the beginning of May, 1898, when there were removed 228 grams of a pultaceous debris mostly of a greyish colour showing here and there areas of blood clot. The gross appearance suggested little, but on microscopic examination it was diagnosed struma suprarenalis sarcomatodes aberrans. In consequence, the whole tumour mass and kidney were later removed by Dr. James Bell.

The tumour was seen occupying the place of the lower half of the left kidney and was 15 cm. vertically by 9 cm. transversely and 8 cm. deep (*i. e.*, about 6 x 3½ x 3 inches). Tumour and kidney weighed 535 grams, (with contents removed at the first operation 220 grams, making a total of 755 grams). In consistence the tumour was soft with a few gelatinous almost liquid areas, it was of a mostly greyish-yellow hue with spots of a bright canary-yellow colour and other dark hæmorrhagic areas. There was a well marked capsule sharply defining the tumour from the kidney proper, the capsule was of a firmer and more fibrous structure than its contents and in it were occasional small hæmorrhagic areas.

Microscopic Examination:—The capsule was fibrous and very vascular in parts, in parts distinctly cellular and less compressed giving the idea that it had increased and was increasing in thickness at the expense of the kidney tissue. In the meshes of the fibrous tissue were to be seen granular unstained areas consisting of fat,

necrosed cells and old hæmorrhages. There were no evidences of infiltration of the capsule with tumour cells. From the capsule large trabeculæ were given off dividing the tumour into loculi some of which were the seats of hæmorrhage, old and recent, which completely masked the cellular elements; others again were filled with non-staining degenerated necrotic cells plus fat globules; others again showed the following structure:—From the surrounding strands of loose and vascular fibrous tissue a delicate vascular stroma was given off between which were to be seen ranks of large polymorphous cells varying from cubical and low columnar to distinctly columnar cells; the cell contents were granular, the nuclei were large and contained many nucleoli. A sharp demarcation between the stroma and the cells was to be made out in typical parts and between rows of these cells there was generally an apparent lumen either empty or containing large fat globules. The cells towards the centre of these loculi were more irregularly arranged in consequence of the branching and anastomosing of the delicate stroma. Though individual areas of these loculi might resemble particular zones of the adrenal cortex there was no further definite similarity of arrangement, still, there was a marked dissimilarity between these cells and those of the renal epithelium.

Sections were stained for fat by Sudan III, (for the knowledge of which reagent I am indebted to Dr. A. G. Nicholls.) Fat was found to be universal in its distribution in the capsule, in the hæmorrhages, in the degenerated areas, as well as in the cellular loculi where it was seen as smaller globules in the cells and larger droplets in the apparent lumina. The fatty change was clearly of the character of a degeneration and not an infiltration. Attempts were also made to find glycogen by Langhans' method but without success, although some of the material was placed in reagents for this purpose immediately after the operation.

From a single specimen it is hopeless to arrive at a definite conclusion as to the nature of these adenomata which are in such intimate connection with the kidney. The first and most natural view is that of Sudeck[1] and Sabourin,[2] that they are truly renal adenomata caused by abnormal growth of the epithelium of the renal tubules. In favour of this view is the fact that in those regions where the specimen here described showed the most perfect growth and the least evidences of degeneration, the characteristic feature was

[1] Sudeck, Virchow's Archiv., Vol. 133, p. 405.

[2] Sabourin, Revue de Médecin, 1884, pp. 44 and 876; and 1885, p. 889; Arch. de Physiol., 1882.

the tendency towards the formation of definite tubules with obvious lumina, the surrounding cells being of a columnar type. Again, the position of the tumour occupying the whole lower half of the kidney region and not appearing as a parasitic outgrowth from the surface, favours this view. The other and more generally accepted theory, is that of Grawitz,[1] to the effect that these adenomata are overgrowths of aberrant portions of suprarenal tissue which have become imbedded in the kidney during the process of development. The main arguments in favour of this theory advanced by Grawitz, Horn[2], and Lubarsch[3] are :

1, The lack of a membrana propria in the apparent gland spaces, in tumours of this type.

2. The structure of the metastases.

3. The form and the colour characteristics of the nucleoli. In the kidney and the liver it is impossible to give the nucleus and the nucleoli different colours, this is easy in the suprarenals and these tumours.

4. The structure of the cell protoplasm. The cell whose structure is the same as that of the suprarenal cells must be derived from the suprarenal and not from the kidney.

5. The resemblance of these tumours to suprarenals, *e. g.* fat in the cells. They state that true kidney adenomata lack this.

6. The presence of giant cells which sometimes are seen in the normal suprarenal.

7. The presence of a capsule. There is always one in suprarenal rests.

8. Glycogen, always present. It is to be found in and between the cells in the form of granules of different shapes and sizes. Lubarsch lays the greatest stress for diagnostic purposes on the presence of glycogen.

My specimen did not present all these characters. The nuclei indeed, were more active than those of the kidney epithelium, but, the comparison should be made not with adult, but with embryonic kidney cells, and again, I was unable to detect glycogen which, according to Lubarsch, is always present. It may be urged that it is not always easy to detect glycogen, and that my failure to demonstrate it may have been due to lack of success rather than lack of glycogen, nevertheless, I proceeded with the greatest care, faithfully

[1] Grawitz, Virch. Arch., Vol. 93, p. 39.
[2] Horn, Virch. Arch., Vol. 126, p. 191.
[3] Lubarsch, Virch. Arch., Vol. 135, p. 149.

following the directions for its detection, so that my personal opinion must be that glycogen was here absent.

In respect to this one specimen, accepting the description of others as regards the nature of renal and suprarenal adenomata, I cannot come to any absolute conclusion as to its origin. Here perhaps, I am in accord with the great mass of workers on this subject, for I cannot but conclude from reading over the literature that most of those publishing cases of so-called aberrant suprarenal tumours of the kidney, write not in a spirit of absolute conviction but in a somewhat nervous and hesitating manner. For myself, I must confess, that brilliant and able as are the papers of Grawitz and Lubarsch, I cannot feel sure that their arguments are absolutely convincing.

Taking more especially into consideration my own case, we must not neglect the very interesting clinical history Here as in most of Lubarsch's cases, there is the characteristic history of hæmaturia, but here we have an explanation of the origin of this disturbance, namely, in 1893, when there was undoubted irritation of the pelvis of the kidney and undoubted presence of stone. The only doubt is as to whether one or more of the later attacks was due to the same cause Now, for the development of stone it is necessary that there be some inflammatory condition. Here then, the earliest recorded state was one of irritation and it is interesting to note that the tumour affected the lower half of the kidney.

More and more now-a-days, we are learning to associate sarcomatous and carcinomatous new growths with antecedent injury and more and more we are of the opinion that Cohnheim's theory of embryonic rests or remains is not indispensable. Or, to put it in other words, we are prepared to state that tumours can and often do arise from what may be termed 'functional cells' of an organ. *e. g.*, in epithelioma of the tongue we do not pre-suppose the existence of a collection of epithelial cells which have throughout their existence been latent and embryonic. Thus on the whole, when an adenomatous tumour grows in the kidney and that after a definite history of previous irritation, it is more rational to hold that the tumour originates from the cells of that organ. The probability is that the majority of the tumours developing in the kidneys develop from kidney tissue and not as Grawitz and Lubarsch hold, from aberrant inclusion of another organ within the kidney. Still, I freely admit that were such aberrant remains present in an organ, they might assume malignant growth quite as freely, and may be more freely than the functional tissue of the organ.

I would, however, ask whether we are perfectly secure in assuming

that the so-called suprarenal rests, minute and encapsulated as they are, which are not infrequently to be found in the kidney, are truly suprarenal tissue? What I mean is this: Embryologically, both kidney and suprarenal cortex originate from the same germ tissue and it has not yet been proved by the supporters of the suprarenal theory, that it is possible to distinguish embryonic renal cells and tubules, or more correctly columns, from suprarenal cells and columns.

There is another matter which the supporters of the suprarenal theory have not adequately rendered clear, I refer to the presence in these adenomata of what Lubarsch terms 'apparent or pseudo-lumina.' The law with regards to all forms of new growth, whether they be benign or malignant, is that the structure is of a lower type than that of the adult tissue from which they are derived; *it is never of a higher type*. Thus, it is eminently improbable that a tumour originating from the cells forming the columns of the suprarenal cortex which throughout their life history have never been regularly arranged around the lumen, should upon undertaking tumour growth, assume or tend to assume such an arrangement. Now the cells in my specimen do tend to assume this arrangement, and Lubarsch, although he speaks of the central canal as an apparent lumen, has to admit that we have this somewhat higher cell arrangement (I say higher, because I do not see how any one can call it lower), and he figures appearances somewhat resembling those which I found in my specimen. On the other hand, if tumours of this nature arise from renal tubules, the appearances are most natural and easily conceivable. They are identical with what we know to occur in connection with other tumours arising from tubular organs, namely, we find a tendency for irregular cell masses to replace well ordered tubules, while here and there, especially in malignant tumours of the mammary gland, we find "pseudo-lumina" that is to say, we find an imperfect attempt to reproduce the lumina of the parent tissue. We do not expect in an adenomatous tumour tending towards malignancy to obtain the perfect and typical lumina of the parent tissue. On again looking over Sudeck's article, I find this idea of lumina, and the evident deviation of these tumours from the kidney parenchyma, strongly supported by that authority in his discussion upon a rather more advanced form of kidney tumour; that, namely, in which there is a definite cystic development. He points out that these cysts are lined by a regular layer of epitheloid cells, and emphasies the fact that such cysts are comprehensible if these tumours originate from renal tubules, but are incompatible with any theory of development from suprarenal columns.

Upon all these grounds, though I cannot but be impressed by the strength of Lubarsch's arguments, I have to confess myself still dubious as to the nature of these tumours. It is still possible that they may be of suprarenal origin, but I cannot hold that it is yet absolutely proven that they are not direct derivatives of the renal epithelium.

NOTE. – A good example of primary adenoma of the suprarenal has been brought to my notice by Dr. Adami. It was a mass the size of a large pea included in the suprarenal proper and showing a tendency towards aberrant growth. In this there were parts which seen under the low power gave the impression of tubular masses, but with a high power what was recognisable was definite columns of cells, which cells were smaller at the periphery where the nuclei formed a ring close to the edge of the column. In the centre of the column were larger polymorphous cells undergoing fatty degeneration. While these cells were degenerated and loose, there was no space between them such as I recognised in the tumour under discussion.

REPORT ON THE CASES OF TYPHOID FEVER ADMITTED TO THE ROYAL VICTORIA HOSPITAL DURING THE YEAR 1897.

BY

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During the year 1897 there were admitted to the Hospital seventy-four cases of typhoid fever, forty-six males and twenty-eight females. There were five remaining from the previous year. Of these seventy-nine cases, seventy-five were treated to a conclusion in 1897; the four remaining cases were in the Hospital at the close of 1897, and are not included in the following notes.

There were seven deaths, or a mortality of 9.3 per cent. Two of the above seven cases died in the surgical department, (to which they were transferred), having been operated on for complications occurring in the course of the disease. (See appended reports of fatal cases, Nos. IV, and V.)

On an average, patients were admitted on the eleventh day of the disease.

The following data are of interest:

Season—

The largest number of cases developed in September, while the smallest number occurred in May.

54 per cent. of the cases developed in July, August and September.

18 per cent. in October, November and December.

15 per cent. in January, February and March.

13 per cent. in April, May and June.

Duration of Cases—

Average days in hospital, 42.8.

" " of fever, 29.

Longest period of fever, 71 days.

Shortest " " 11 "

Severity—

Very severe	12
Severe	8
Moderate	30
Mild	22
Very mild	3

Symptoms—

Onset and Course :—In 85 per cent. of cases the onset was gradual, the most frequent symptoms being: Lassitude, frontal headache, weakness, anorexia, chilly sensations, and insomnia. In many cases pain in the back of the neck was present as an early and distressing symptom.

Of the above, no symptom was so common as frontal headache.

In 15 per cent. the onset was fairly acute.

In one case the onset was very acute, with a distinct rigor, vomiting and headache.

In another case, with a less acute onset, there were repeated rigors at the beginning.

In 9 per cent. a rigor, or rigors, occurred early in the disease, but not as an initial symptom.

In two cases free perspiration was present during the first few days.

In 13 per cent. occasional vomiting occurred early.

Diarrhœa was present in nearly 30 per cent. of cases, more commonly found in the early stage.

Constipation was present in 40 per cent. In a few cases diarrhœa and constipation alternated. In the remaining cases the bowels were regular at the onset.

Epistaxis at the onset or early in the disease, occurred in 12 per cent. In one case, on the seventh day, there was epistaxis to the extent of thirty ounces, and in order to control the hæmorrhage, the nares had to be plugged.

Delirium of varying degrees at some time during the course of the trouble was present in 16 per cent.

Eruption :—An eruption of "rose spots," occurred in 80 per cent. of cases, and diffuse erythema in one or two cases. In one case, numerous cutaneous and subcutaneous abscesses developed after the fortieth day. (Staphylococci found in cultures.) In the remaining cases there was no eruption of any kind.

The earliest appearance of "rose spots," was on the third day.

The latest appearance of "rose spots," was on the twenty-eighth day.

The shortest duration of eruption was seven days.

The longest duration of eruption was forty-one days.

In 16 per cent. of cases the eruption was present on the trunk and and extremities, while in a few of these cases it was also present on the face.

Palpation of the Spleen :—The spleen was palpable in 75 per cent. of cases.

In one case it was palpated as early as the third day, while in another

it was not palpated until the forty-second day. In the great majority of cases the spleen became palpable on the sixth to the eight day of the disease. In two cases it remained palpable as late as the forty-second and forty-fifth day respectively.

RELAPSE:—A typical relapse occurred in 5 per cent.

The longest duration was twenty days.

The shortest duration was seven days.

These all ran a mild course, and in the majority of them there was no complaint of discomfort.

RECRUDESCENCE:—Occurred in five cases, and was of short duration.

COMPLICATIONS.

INTESTINAL:—*Perforation* of the bowel occurred in two cases, at the thirtieth and thirty-fifth day respectively. (See appended notes III, and IV.)

Hæmorrhage (intestinal) in two cases. One of these occurred on the forty-sixth day, and was slight. In the other case there were repeated hæmorrhages on and after the sixteenth day. Death occurred ten days later. (See case I.)

CIRCULATORY:—Marked cardiac dilatation was present in two cases.

Myocarditis was marked in one case.

Marked cyanosis appeared in five cases.

Left femoral phlebitis presented in three cases.

RESPIRATORY:—Pleurisy occurred in five cases (or 6.6 per cent.) In four of these cases there was effusion. In all cases the pleurisy occurred late; in two during convalescence, and with no elevation of temperature.

Bronchitis was present in 10 per cent., either early as a symptom or later.

RENAL:—Nephritis occurred in eight cases (11 per cent.) In two cases it occurred early in the trouble. (Acute parenchymatous.)

In the remaining cases it occurred late in the disease, and was mild.

All cases made a good recovery.

OTHER SYSTEMS:—In one case abortion occurred during the third week of the disease and in the third month of pregnancy. The course of the disease was not manifestly modified by this. On the sixth week delirium developed, and for a few days the patient was in the "typhoid state." On the fifty-ninth day she developed suppurative otitis media, and a few days later mastoiditis, and later mastitis, crural neuritis and subacute nephritis. The convalescence was slow, but complete.

Severe vomiting occurred in one case, late in the disease. (No foreign cause assigned.)

Jaundice was present in two cases.

Crural neuritis appeared in two cases, during convalescence.

Multiple superficial abscesses occurred during convalescence in one case. (Staphylococcus pyogenes aureus found.)

Periostitis of the ulna was present in one case, one month after leaving the hospital, and two months later periostitis of the tibia. (Staphylococcus was found in pure culture.)

Sources of Infection:—None definitely determined, though in some instances bacteriological examination of the suspected foods, *e. g.*, milk, etc., was made.

In one case the patient nursed her son during his illness with typhoid. In about ten days after his death this patient was affected.

In one case the patient was taken ill during his wife's convalescence. from typhoid.

In one case the patient's mother was ill with typhoid one or two weeks before.

Two cases were admitted from a convent, where several cases had developed a short time previously.

From another institution there were four cases which developed during the same week. In these cases the mode of onset was almost identical. "Pain in the back of the neck" was a distressing symptom in each case.

The Widal test was employed in all cases admitted after May 1st, 1897. Prior to this it was employed in many cases, but no accurate records were kept.

The earliest time at which it was obtained was on the third day. In a few cases it was not obtained until third week.

In the great majority of cases it was present at the time of patient's entrance, this being on an average the eleventh day of the disease.

In hospital cases observations cannot, as a rule, be made sufficiently early to enable us to say definitely how early the reaction may be obtained. It may be said, however, that it proves of much value as a factor in diagnosis. In but one case did the test fail.

Synopsis of Fatal Cases.

Case I.—H. C., male, æt. 34, painter. Admitted March 31st, 1897, complaining of weakness, diarrhœa, and cough. For one month prior to entrance the patient was ill, but was able to go about. Eight days before entrance diarrhœa set in, and was very severe. A few days later cough and shortness of breath and profound weakness came on, and he was compelled to go to bed.

On admission, a well developed and well nourished man; mental

state dull; sleep broken; diarrhœa, cough, and muco-purulent expectoration present; no rose spots; spleen palpable; a trace of albumen, but no casts, in the urine.

Subsequent events:—Two days after admission rose spots appeared. The disease ran a course of moderate severity until the tenth day after admission, when he became delirious, and three days later the patient was in the "typhoid state." The urine now contained more albumen and casts, and suppurative otitis media developed. the heart sounds were weak, and the pulse small, rapid, and irregular; temperature subnormal; abdomen distended (liver dullness not obliterated); diarrhœa very severe; constant hiccough and occasional vomiting; repeated small hæmorrhages from the bowel. Death on the seventeenth day after admission.

Widal test daily tried, but not positive until twelfth day after admission.

Autopsy revealed the usual typhoid lesions (no perforation.)

Case II.—A. B., male, æt. 19, farmer. Admitted to hospital November 16th, complaining of headache, anorexia and weakness. The trouble came on gradually twenty-one days before admission. He kept at work for seven days when he took to bed. During the second week he had repeated epistaxis. On the sixteenth day active delirium and stupor developed, and in a few days coma.

On admission, a well developed young man, in the "typhoid state," markedly cyanosed. Impaired note at the bases of the lungs, and here breath sounds were weak and a few moist rales were heard. Large bed sores over sacrum. Spleen not palpable, and no rash Temp. 104°; pulse, 120; resp. 36. Reflexes absent. The urine contained albumen and many hyaline and granular casts.

Death occurred on the fourth day after admission, *i. e.*, twenty-fifth day of the disease. Temp. 104°; pulse, 160; resp. 76, shortly before death.

Case III.—N. P., male, æt. 21, bookkeeper. Admitted December 7th, 1897, on the twenty-seventh day of the disease, complaining of weakness, headache, diarrhœa and abdominal pain. Illness came on gradually with above symptoms, but he was able to attend to his duties until the eighteenth day, though feeling very wretched. He then went to bed. Diarrhœa not troublesome until the eighteenth day, when it became very severe, and persisted throughout. On the day prior to admission the patient had repeated epistaxis and twitching movements of the muscles of the hands and face.

On admission, a fairly well developed young man; face flushed; eyes staring; actively delirious and stupid. T. 102.2°, P. 120, R. 36.

Pulse irregular, dicrotic and weak. Tongue coated, brown and dry; breath foul. Rose spots profuse, and spleen palpable; abdomen tender. Urine normal.

Subsequent events.—The day after admission he was more delirious and more comatose, and marked cyanosis was present. Twitching movements more marked, and there was involuntary passage of faeces. Three days after admission, nephritis developed, and the abdomen was somewhat distended, but patient was conscious at times, and spoke rationally. For eight days after admission he improved a little, and could answer questions intelligently. Now he complained of pain in the right lower abdominal quadrant; the abdomen became markedly distended; umbilicus everted: general abdominal tenderness (more marked on the right side); general abdominal rigidity. Obliteration of liver dulness; knees drawn up; facies anxious; retention of urine. Delirium again became marked, and coma developed; he vomited once. Death thirty-six hours after onset of above exacerbation, *i. e.*, thirty-fifth day of disease.

Autopsy revealed intestinal perforation and peritonitis.

Case IV.—B. K., male, æt. 22, cotton weaver. Admitted December 8th, 1897, *i. e*, twelfth day of disease, complaining of weakness, anorexia, headache, diarrhœa, fever and chilliness. Onset was gradual: he kept at work until the eight day, when he went to bed.

Personal and family history good.

On admission, a fairly well nourished young man; mental state dull; sleeps poorly; is hot and restless. There is no delirium. T. 103.3°, P. 96, R. 24. Profuse eruption of "rose spots" on abdomen, chest and arms. Spleen palpable; tenderness in lower abdominal zone. Tongue heavily coated; breath foul; appetite poor; sleep disturbed; diarrhœa present; urine negative; Widal test positive.

Subsequent events.—For eleven days after admission, *i. e.*, till the twenty-third day of the disease, the course was one of moderate severity. Now the patient complained of slight pain, situated on the right side, opposite the umbilicus, and lasting a few minutes. Two hours after the above complaint there was general abdominal distension and tenderness most noted in the right lower abdominal quadrant. Liver dullness obliterated. Facies drawn and anxious, but not markedly so. Pulse rapid and small. Mental state good. Very little complaint of spontaneous pain. Perforation diagnosed. Five hours after exacerbation he was taken to the surgical department. The abdomen was opened and found to contain faecal matter, and there was general peritonitis.

A "pin point" perforation was found 2½ inches above the ileo-cæcal

valve. This was sutured and the peritoneal cavity flushed with saline solution.

Death thirteen hours later, on the thirtieth day of disease.

Case V.—Miss C., æt. 35, typewriter. Admitted September, 21st, on the eighteenth day of disease, complaining of abdominal pain, diarrhœa, weakness and insomnia.

For about three weeks patient was feeling unwell, and for a few days did not attend to her duties. A few days after resuming work had again to give up, and took to bed. The attending doctor stated that the spleen was palpable and temperature 102°. Two days before entrance the stools were clayey and offensive. On the day before entrance vomiting occurred, and later severe abdominal pain in the region of the liver, and here there was great tenderness. A mass could be palpated in the region of the gall-bladder. Vomiting persisted during that day. Temp. 94.5°.

She never had such an attack previously, and was never jaundiced.

On admission, a rather tall and spare woman; facies anxious, not collapsed; no jaundice. T. 100°, P. 96, R. 24. Takes nourishment well; sleeps poorly; tongue coated; breath foul; appetite poor; continuous severe pain, and tenderness in the region of the gall-bladder. The liver can be palpated at costal margin. In right hypochondrium, and reaching three cm. below umbilicus, is felt a mass which is tender on pressure. Note over this area is not dull, but gives modified tympany.

The urine contains a trace of albumen,, but no casts nor bile. Widal test positive.

Subsequent events:— Severe pain (as above) continued. Two days after admission there was some œdema of the abdominal wall over the tumour, and the urine contained albumen, casts, and bile. The stools were clayey.

The patient was transferred to the surgical side for operation, as a diagnosis of cholelithiasis was made, which proved to be so The gall-bladder was much enlarged, and contained numerous stones, and bile containing pus. Wall of gall-bladder infiltrated and covered on its serous surface with lymph. Death occurred a few hours later.

The autopsy revealed typical typhoid lesions in the bowels. From the contents of the gall-bladder typhoid bacilli were obtained in pure culture. (See Montreal Medical Journal, vol. xxvi., No. 6, p. 572.)

Case VI.—W. P., male, æt. 31. Admitted on the 20th of October, 1897, on the ninth day of his disease. He was very apathetic. The course of the disease was unusually severe. He had twenty-seven baths during first five days. On the 25th of October a slight amount of clotted blood was noticed in the stools which were frequent. On

the 27th of October he lost six ounces of blood. On the following day he had a hæmorrhage, amounting to twenty-six ounces, soon followed by another. It was computed that he lost within twenty-four hours eighty-three ounces of blood, but after the 28th there was no further bleeding. At no time was there much impression made on the pyrexia by the heavy blood loss.

On the 29th the abdomen was distended. The distension continued to slowly but gradually increase, day by day, up to November 4th, when he succumbed.

After death numerous ulcers were discovered in the lower ileum, cæcum and ascending colon; but in no instance had perforation occurred.

It was difficult to trace the source of the bleeding, though it apparently arose from an ulcer in the hepatic flexure of the colon.

No marked injection of the serosa opposite the ulcers was to be made out.

The case is, in our opinion, especially interesting in view of the possibility of a paretic state of the bowels being brought about by the opium which was used freely to control the hæmorrhage. It is often a difficult point to decide how far it is advisable to push opium in cases of intestinal hæmorrhage. The reaction following the action of large doses given for some days must be very considerable. In this case we endeavoured to counteract this by the administration of both atropine and strychnine, but with unsuccessful results. While opium is undoubtedly the most useful drug we possess in these cases, it is well to be cautious about its action, and it should, we think, be promptly discontinued when the hæmorrhage is apparently checked.

Case VII.—W. S., male, æt. 25, laborer. Admitted July 8th, 1897, complaining of headache, weakness and constipation. Patient came to the out-door department for treatment about ten days before admission. He then stated that for about two months previously he was troubled with above symptoms, yet was able to go about and do a little work, though feeling very wretched.

Personal history good, save for excessive use of alcohol at times. Family history good.

On admission, a large well developed and well nourished young man: very apathetic. Temp. 103.6°. Pulse 104, Resp. 36. Skin warm and moist. Tongue dry and furred. The abdomen distended, and resistant and tender to palpation. The spleen palpable, and a few fading rose spots noted on abdomen. Bowels constipated. Widal test positive. Urine: normal.

Subsequent events:—For five days after admission he was stuporose;

then low muttering delirium set in and frequent vomiting occurred, with incontinence of urine and fæces. Temp. lower than during first week after admission. On July 20th, temperature began to rise, and just before death reached 106.6° ; pulse, 160 ; resp. 62. Death on the thirteenth day after admission.

The autopsy revealed no typical typhoid lesions. There was some swelling of the mesenteric glands, and three Peyer's patches near the ileo-cæcal valve were slightly elevated above the general surface.

Bacteriological and microscopic examination revealed the presence of the Bacillus Typhi. These were found in the spleen and mesenteric glands in characteristic clumps. They gave the typical Widal reaction when tested with blood serum from patients suffering from typhoid fever.

(For full report of this case see paper by Drs. Nicholls and Keenan in the MONTREAL MEDICAL JOURNAL, vol. xxvii., No. 1, January, 1898.)

CAUSES OF DEATH.

The causes of death in the above cases were :—In case 1, hæmorrhage ; case 2, toxæmia ; cases 3 and 4, perforation ; case 5, suppurative inflammation of the gall bladder ; case 6, abdominal distension (?) ; case 7, toxæmia.

Case Reports.

ON A CASE OF SACCULATED ANEURYSM OF THE PARIETO-TEMPORAL BRANCH OF THE MIDDLE CEREBRAL ARTERY.

BY

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The specimen presented this evening is one from a very well characterised case of general arterio-sclerosis, for the notes of which I am indebted to Dr. Robins, Senior House Physician at the Royal Victoria Hospital, the patient having been admitted there under Dr. Stewart and having afterwards passed over to the surgical side under Dr. James Bell.

It is from an old woman of 70 years of age, who gave a history of excellent health until about eighteen months before her death; then, she happened to scratch a corn upon the middle toe of her left foot and as a result a sore formed, and this sore never properly healed. This was a year and a half ago. Last August, seven months before her death, the little toe became black and shrivelled and dropped off: a month later the fourth toe underwent the same change and the process of dry gangrene continued until at Christmas time all the toes of the left foot exhibited dry gangrene. The process continued gradually until, on her admission in the middle of March, the skin over the heads of the metatarsals was also affected and there was a well-marked zone of demarcation stretching across the foot. Now also it was noticed that the palmar surface of the thumb and index finger of the left hand were bluish, the fingers were somewhat shrivelled and wrinkled and the tips were cold. The patient experienced very considerable pain in the affected left leg.

Inasmuch as the process seemed now to be passing from a condition of dry to suppurative gangrene, it was felt that no time must be lost and the patient was removed without delay to the surgical side for amputation. On March 16th, Dr. Bell was about to operate, but when everything was prepared a priest was still with the patient and so the operation was put off—a most fortunate occurrence, for, not ten minutes later, the patient suddenly became unconscious, the limbs all appeared to be paralysed and flaccid, the pupils were found equal

and moderately contracted but not reacting to light, while the cornea was anæsthetic. The breathing was shallow and somewhat stertorous; the left side of the mouth drawn up; the pulse was between 70 and 80. Movement gradually returned and in three quarters of an hour, the only limb not moved was the right leg. The patient, however, never fully regained consciousness and on the following day she died. The diagnosis was made of senile gangrene and cerebral apoplexy.

Not to enter too fully into the details of the autopsy which was performed on the day of her death, it may be said that there were all the classical signs of a generalised arterio-sclerosis, the sclerosis and atheroma more especially affecting the medium sized vessels, which were enlarged, slightly tortuous and presenting frequent calcareous plaques. In addition this arterio-sclerotic condition had led to the senile gangrene and to cataract. Accompanying it was cholelithiasis.

Turning now to the cranium: upon removing the skull cap, the right half of the brain was seen to bulge and upon opening the dura mater, a fair amount of loosely clotted blood escaped. This blood clot extended to the base of the brain round the circle of Willis and downwards through the foramen magnum. The convolutions of the right side were somewhat flattened. Upon removing the brain there was found extensive sclerosis of the arteries forming the circle of Willis with atheromatous plaques scattered here and there in their walls and upon the parieto-temporal branch of the right middle cerebral, just at the beginning of the fissure of Sylvius was a lateral mass somewhat oval and elongated, between three-eights and a half an inch long, surrounded by recent blood clot, from which, upon injecting fluid into the cut end of the internal carotid, the fluid easily oozed. This mass was formed of a distal firm fibrous portion and a proximal thin-walled space; it was a sacculated aneurysm of the very origin of the parieto-temporal branch and the aneurysm had ruptured. Upon opening the brain the left ventricle was relatively large and had colourless fluid contents, the right was smaller and also free from blood, but its floor, especially in the middle portion was bulging; the right corpus striatum was unaffected, but the optic thalmus was profoundly disorganised; its ventricular layer easily tore through, revealing a large firm blood clot extending for 5 cm., from before, backwards and outwards.

Thus then the rupture of the aneurysm had led to destruction in the brain substance as well as to external hæmorrhage. It is interesting to note that this branch of the middle cerebral is given off beyond the region of that artery from which arise the lenticulo-striate, the lenticular and lenticulo-optic branches, and thus the inter-

nal capsule and lenticular nucleus were unaffected save by pressure. Herein the case differed from the more common form of cerebral hæmorrhage.

It is well known that of the cerebral arteries the middle cerebral and its branches, are the most frequently the seat of aneurysms. Gowers points out that in the 154 cases which make up the statistics of Lebert, Durand and Bartholow, the middle cerebral was involved in 44, the basilar in 41, the internal carotid in 23, the anterior cerebral in 14, the posterior communicating in 8, the anterior communicating in 8, the vertebral in 7, the posterior cerebral in 6, the inferior cerebellar in 3; but I cannot at the present time recall to mind a case in which I have come across this one branch, the parieto-temporal, being the seat of aneurysm. Doubtless a fuller search through the literature on the subject would reveal some few cases of the condition.

SPECIMEN OF RUPTURED TUBAL GESTATION.[1]

BY

F. A. L. LOCKHART, M.D.

This specimen was removed from Mrs. C., aged 29 years, a patient of Dr. Alex. MacDonald, of Vanleek Hill, to whom I am indebted for the case, and who had diagnosed the condition before sending for me.

The patient's last normal period was on March 14th, she always having been quite regular in every way. She was again unwell for two hours about the middle of May, and for the last ten days has suffered from a discharge like dirty water.

On Wednesday (June 1st) she felt a sudden sharp pain in the hypogastric and left iliac regions. She became collapsed, and faint, and vomited. There were two other attacks of faintness within the next 24 hours and the pain gradually became less.

Dr. MacDonald first saw her on Friday, her pulse at that time being weak and thready and running at a rate of 120. Her temperature was 100° F., and she was markedly blanched although she usually had a very high colour. Her stomach had been very irritable all along. The urine was normal

When I saw her in her home on Saturday evening, she was still very blanched, but otherwise in good condition, the pulse being 96 and of fair volume, and the temperature was 99½° F. The only treatment which she had received previously was absolute rest in bed and opium. The bowels were freely cleared out by enemata and a pint of saline administered per rectum.

Local examination revealed a laceration of the perineum with prolapse of both vaginal walls. Cervix was soft and the seat of a slight bi-lateral laceration, the uterus was lying to the front and slightly enlarged. Behind and to the left side of the uterus was a firm rounded mass, which was fixed in the pelvis. It was the size of a small orange, and was, without any doubt, a mass formed by the rupture of a tubal gestation of the left side. As there was no evidence of active hæmorrhage going on and the light was very poor, it was decided to postpone operation until the next day.

On Sunday, June 5th, Dr. A. A. Gibeault giving ether, and Drs. A. MacDonald and Mackinnon assisting, the abdomen was opened, a large quantity of very dark fluid blood gushing out. In order to prevent

[1] Read before the Montreal Medico-Chirurgical Society, June 6th, 1898.

any fresh hæmorrhage from occurring, the left broad ligament was clamped close to the uterus, after which the blood and clots were cleared out of the abdomen. The mass was then freed from its adhesions and lifted out of the abdomen and the pedicle ligatured and divided. The abdomen was then flushed out with saline and wiped dry, after which the wound was closed by two rows of sutures, one of continuous catgut, uniting the peritoneum, the other of interrupted silk-worm gut included the skin, sub cutaneous tissue and the fascia.

Description of Specimen.—This mass proves to be the left tube and ovary. The fimbriæ of the tube are reflected backwards over the tube, forming with the broad ligament, a species of canal through which the tube runs. A large rupture is seen on the posterior surface of the broad ligament, and, although the fœtus has not been found, the small membranous sac in which it lay can be readily seen. Primary rupture has occurred into the space between the layers of the broad ligament, which in turn has given way and allowed the contents to escape into the peritoneal cavity.

"OBITER SCRIPTA" V.

BY

C. F. MARTIN, B.A., M.D.,

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DISEASES OF THE HEART AND GLYCOSURIA.

The association of glycosuria with organic cardiac disease seems to be little noted by writers of medical text-books, and certainly the condition is quite uncommon. By some it was considered possible that disturbed exchange of gases in the lungs would account for the condition, but cyanosis is too common a condition apart from glycosuria to render any such theory tenable.

Within recent time no less than four cases have occurred in our clinic while another case seen outside of hospital adds further to the number. In many cases of diabetes, minor and probably functional conditions of the heart muscle are doubtless quite common, and the lesion thus found will readily lead to the development of murmurs. In our own series of diabetic patients, such a state has been not infrequently observed, but the condition scarcely comes under the category of organic disease of the heart.

In other cases again of heart disease, there is a very transient glycosuria just as occurs in nervous diseases, malignant conditions and a variety of affections. Even this, however, in cardiac disease is rare, while the persistent presence of sugar in the urine is still more uncommon.

Some of these cases will be of sufficient interest to bear notice.

CASE I.

Myocarditis with hypertrophy of the heart and loss of compensation—Persistent glycosuria—Some obesity.

The patient thus afflicted was a fairly stout woman whose complaints were attributable to the lost compensation, viz.: Dyspnœa, amounting to orthopnœa, marked œdema of the legs, palpitation, etc. There was marked cyanosis. The pulse was 120, very irregular in volume and rhythm. The præcordial dulness was markedly increased in a transverse direction and no murmurs could be distinguished.

According to Dr. Stockwell's notes, the urine had a specific gravity

of 1030. There was a slight trace of albumen, and 4½ per cent. of sugar, as tested by the polariscope.

Although the patient has been under observation for more than two months, there has never been an absence of sugar from the urine, though the percentage has gradually diminished. Never during her illness has she suffered from the other usual symptoms of diabetes mellitus, neither thirst, emaciation, boulimia or polyuria. While naturally the cardiac condition could readily explain the absence of polyuria, yet there is no history of such a symptom having ever been present and none of the complications incident to a diabetic condition have at any time so far manifested themselves.

CASE II.

Mitral endocarditis with enlargement of the heart—Syncopal attacks—Glycosuria.

In this instance the patient was a sparely built married woman, aged 28 years, who was taken to the medical clinic on account of fainting fits from which she had suffered at rare irregular intervals previously. The personal history indicated moderation in all things and the family history was good.

On admission, after recovering from the syncopal attack the patient was found to be strong and feeling well. The heart, however, was distinctly enlarged in its transverse diameter, the sounds were irregular and accompanied by a soft systolic apical murmur transmitted well into the axilla. There were no signs of lost compensation. The urine showed the presence of abundant sugar, though the specific gravity was 1020, and the chemical examination revealed no other abnormality. Apart from slightly increased excretion of urine there were absolutely no other evidences of true diabetes. The patient was under observation for a few days only and the persistence of the glycosuria could not be ascertained.

CASE III.

Enlarged heart—Loss of compensation—Persistent slight glycosuria.

W. F., a farmer, æt. 35 years, entered the Royal Victoria Hospital complaining of numbness and swelling of the legs, dyspnœa, palpitation and dimness of vision. The illness was of three years duration, beginning with a sensation of tightness in the epigastrium, but no vomiting was ever present. Early among the symptoms moreover was a brick red deposit in the urine, later on came headache, numbness in the legs and blurred vision with palpitation. There was at one time increased thirst, but this symptom had of late disappeared,

while no other evidences of diabetes were present apart from examination of the urine. This had been examined daily for more than three weeks and showed on an average ½ per cent. of sugar. There was an occasional trace of albumen. The heart dulness extended beyond the nipple line for about half an inch and the beats were at times irregular. No murmurs were heard, however, at any time.

CASE IV.

General arterio-sclerosis—Aortic regurgitation—Slight glycosuria.

The victim of this malady was a male of nearly 50 years, whose complaints pointed strongly to a condition of true diabetes, viz.: loss of flesh, weakness and thirst. Six months previously his illness first manifested itself with progressive loss of flesh and weakness. Otherwise, however, he had no complaints, and the thirst does not seem to have ever been excessive. His personal history gave no clue to the condition of the vascular system. The pulse was collapsing and the capillary beats were easily demonstrated. The arterial walls were thickened. A to-and-fro murmur at the aortic cartilage readily explained the peripheral vascular signs, and no other orifices were involved. The area of præcordial dulness was but slightly increased. The urine was repeatedly examined during his short stay in the clinic (four days) and on two occasions the sugar was found absent, and at other times it ranged from a mere trace to ½ per cent. The quantity of urine passed in 24 hours never exceeded thirty ounces.

These cases are of interest as showing the concurrence of two conditions not usually associated. Some of them would indicate that even with much glycosuria and its persistent presence, the usual signs of diabetes may be absent. When, however, one considers in how numerous and varied a series of maladies, glycosuria is an attendant symptom, it need not be wondered at that here too in cardiac disease similar conditions may from time to time arise. The occurrence, however, seems scarcely to have been noted by most writers so far as the literature at my disposal indicates.

A CASE OF CYSTINURIA.

BY

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R. McL., female, aged 23, a chlorotic, was admitted to the medical wards of the Montreal General Hospital, 25th April, 1898. There was no history of urinary disorder apart from occasional "scalding" during micturition extending over a period of five months previous to admission. No family history of calculus. The bladder was carefully searched for stone with negative result.

Urinalysis.—S. G. 1035: distinctly acid; recent specimen clear straw color, but on standing twenty-four hours developed a peculiar faint, greenish-yellow tinge with distinct odor of sulphydric acid. An abundant colourless, crystalline deposit, closely resembling triple phosphates, appeared at the end of six hours. Microscopical examination showed numerous six sided tablets, arranged singly or in rosettes, with highly refractive borders, giving the typical chemical tests for cystin, with solutions of ammonium and acetic acid.

Cystin crystals may be readily differentiated from six sided crystals of uric acid by the addition of ammonia which simply dissolves the cystin (which crystalizes out on evaporation) but forms with uric acid crystals of ammonium urate.

From triple phosphates, crystals of cystin are distinguished by the addition of acetic acid, the former being readily soluble, the latter remaining unchanged, or if anything, their definition made more perfect.

The crystals may be obtained in fairly pure state for preservation by repeated washing on the filter with dilute solution of acetic acid and subsequent drying.

I am indebted to Dr. Lafleur for the opportunity of publishing the above notes.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

The Relation of Migraine to Epilepsy,

B. K. RACHFORD, M.D., of Ohio. "The relation of migraine to epilepsy."—*The Am. Journal of the Med. Sciences*, April, 1898.

After quoting at some length from numerous authorities the teaching concerning the kinship of migraine and epilepsy, which is one of fact and not of theory, Dr. Rachford goes on to show the manner of their relationship. He emphasizes the necessity of a clear conception of the etiologies of the symptom-groups which characterise these two so-called diseases. Their kinship is understood only by knowing the "family tree."

According to B. Sachs, Landon Carter Gray, and James G. Wilson, nothing is absolutely known of the essential underlying pathological process in migraine.

He summarizes the meagre knowledge of the pathology of migraine in the following propositions :

1. The sensory neurons of the cerebral cortex play some *rôle* in pathology of these attacks.

2. Reflex irritation starting from the eye, the pelvis, the intestinal canal, or elsewhere, may be the exciting, but not the essential cause, of a migrainous attack.

Dr. Rachford strongly supports the view recently proposed by him that paraxanthin is an all important factor in the production of true migraine. The chief of these propositions are :

1. Paraxanthin is with difficulty found in normal urine.

2. It is readily found in urine passed during attacks of migraine.

3. It is not found in excess in such patients between the attacks.

4. Paraxanthin is not found in excess in patients suffering from other forms of severe headache.

5. Paraxanthin is excreted from the blood by the kidneys.

6. Experimentally, poisoning by this product induces certain symptoms very like those of a patient suffering from migraine.

Concerning epilepsy, the writer, accepting the difficulties of classification, claims that there is one form under the class, toxic epilepsy, which is termed paraxanthin epilepsy. Clinically this form may not be distinguished, but it is claimed that there are certain features pointing toward this type of the disease. Epilepsy occurring in middle life in those who have had migraine in early life, will likely be found to belong to this type. From the examinations of the urine of such cases, and from the experiments made on guinea-pigs with the final fluid containing the paraxanthin, Dr. Rachford is convinced that there is such a form of toxic epilepsy, and thus the relation between migraine and epilepsy is established. Migraine, therefore, is closely related to toxic epilepsy and possibly only to paraxanthin epilepsy.

Why this product induces migraine in one individual and epilepsy in another, or why it should produce migraine in early life and epilepsy later, is not known.

Liver Cirrhosis and its Varieties.

Alexander James, M.D. "Liver cirrhosis and its varieties."—*The Scottish Medical and Surgical Journal*, July, 1898.

The review under this heading in the June number of this Journal was through mistake unfinished, Dr. James' article having appeared only in part up to that date.

In all cases of cirrhosis of the liver, no matter what the cause may be, one main change is recognised, viz., overgrowth of the connective tissue and the relative disappearance of the parenchyma. He explains these changes by reference to the changes which occur in acute yellow atrophy of the liver. In the typically acute case there is disintegration and disappearance of the cells, while in the less rapid cases a relative increase of interstitial tissue is found. This is equal to saying that the toxic substance which causes the destruction of the parenchyma, at the same time induces an overgrowth of the interstitial tissue. The question arises: How is it that a toxine is capable at one and the same time of causing destruction of one kind of tissue and overgrowth of another? Dr. James answers this question on the basis of cell difference. The more elaborate and complex liver cell becomes degenerated, while the less complex connective tissue cell is stimulated.

At the end of his interesting paper the author makes a *résumé* of conclusions which he wishes to draw:—

1. "In the very rapid cases of acute yellow atrophy the toxin is so

tremendously powerful that it destroys the liver cells before reproduction and consequent increase of fibrous tissue occurs to any appreciable extent. In the less rapid cases, the toxin acts rather less intensely, so that before the disintegration of the liver cells is sufficient to kill the patient, the interstitial tissue has time to reproduce itself to some extent. In both cases new formed bile ducts are an associate."

2. "In cirrhosis of the liver, the toxin acts more mildly. Time is therefore, allowed for more marked retrograde changes to occur. The interstitial tissue has multiplied to an extreme degree, and the liver cells are functionally and structurally degenerated, new formed bile ducts are to be looked for, and bearing in mind the factors which lead respectively to the biliary and portal forms of cirrhosis, we can presume that they should be more marked in the former than in the latter."

3. "In cirrhotic cancer of the liver, the toxin acts yet more mildly. It gives time, therefore, for the retrograde changes, described above, to occur, viz., fibrosis, degeneration and disappearance of liver cell, and formation of new bile ducts. But the retrogression has gone further, for the epithelium lining those bile ducts has become still more embryonic in character. The cells, indeed, have practically become cancer cells and are nourishing and reproducing themselves as such."

Chronic Diarrhœa Associated with Achylia Gastrica.

Allen A. Jones, M.D. "Chronic diarrhœa associated with achylia gastrica."—*The Journal of the American Medical Association*, July 30, 1898.

Achylia gastrica is a term which was suggested in 1892 by Einhorn for these gastric conditions in which the stomach secretes no juice. Several writers have written upon this subject since, but doubtless the nomenclature has led to some confusion since "atrophy of the gastric mucosa," "disability of gastric secretion," "anadenia ventriculi," "gastric anacidity" have been applied to one and the same condition.

Dr. Jones emphasises in this paper the possible results of suspended gastric function in the production of diarrhœa, chronic in character, and conforming in most respects to that form known as lienteric diarrhœa.

This form of diarrhœa may be of daily occurrence, especially in the morning; again after each meal, or irregularly throughout the day.

Another class is that in which the diarrhœa is periodic, coming on suddenly, lasting a week or two and being succeeded by constipation or regularity of bowels only to be succeeded by similar attacks. Pain

is not the rule. The temperature may be normal or sub-normal, very rarely febrile. The stools are watery and frequent and contain undigested food. The treatment of these cases is best secured by the the use of hydrochloric acid, chloride of iron and pepsin. The acid should be administered in the dilute form in doses of from 20 to 30 drops and repeated in an hour. This agent, as Dr. Jones remarks, is a positive necessity for these cases.

A Further Plea for Intragastric Electrization.

MAX EINHORN, M.D. "A further plea for intragastric electrization." —*The Medical News*, June 18, 1898.

While among authorities upon the treatment of gastric disorders there seems to be an advance toward more perfect harmony of opinion concerning the benefit of electrization of the stomach, the physiological effect is yet a matter upon which difference of opinion exists. Einhorn is an enthusiastic advocate of intragastric electrization. Three tables are presented in this article. The first consists of 118 patients who were treated with direct faradization of the stomach. The second table contains cases which were first treated by direct faradization without satisfactory success and to whom galvanization was applied. The third table consists of 38 patients treated by intragastric galvanization alone. In addition to electrization, most of the patients were given the usual remedies. In all cases the deglutable electrode was used. No accident has occurred in the use of this therapeutic measure, although several thousand applications have been made. A great variety of cases has undergone this treatment, including dilatation of the stomach, atony of the stomach, hyperchlorrhydria, enteroptosis, gastritis of chronic type, gastric ulcer and gastralgia.

The results obtained in these and other cases have been satisfactory in a high degree.

W. F. Hamilton.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Treatment of Fracture of the Patella.

STIMSON. "Treatment of fracture of the patella."—*Annals of Surgery*, August, 1898.

How to treat a fractured patella is a much debated question and one of particular interest at the present moment. Since Lister advocated open incision and wiring of the fragments the profession has been divided on the subject. If it could be done without risk of infection, most surgeons would probably treat many of their cases in that way. An experience sufficiently large, however, has accumulated to demonstrate that even with our present technique infection may and does occur in a certain number of cases. And further, when infection does occur the results are in some instances simply disastrous, resulting in a stiff joint, amputation, or even death.

Stimson asks the pertinent question: Is the result in successful cases of incision and wiring enough better than that obtained by the older methods to justify one in exposing a patient to the increased risk? A resort to a method which involves risk to life, or of such disability as is produced by ankylosis or amputation, can be justified only when that risk is very small, or when the existing conditions are such that the functional result by another method would probably be much inferior to that commonly obtained. It must be remembered that the injury in itself does not endanger life, and its treatment by methods that carry no risk to life furnishes a large measure of success when those methods are properly applied.

The objects of an open incision are to turn up the fibro-periosteal fringe and to remove strips of torn fascia, blood and exudate, and the fragments if tilted can at the same time be rectified.

A fibro-periosteal fringe is almost constant, but it is narrow and covers only a small part of the raw bony surface. That its importance has been over-estimated is shown by the good results obtained in many cases treated by methods which do not remove it. On the other hand, the long strips of fascia which are sometimes torn from the lateral regions below the joint and drawn up into the gap, appear to be a serious bar to union, and their presence is wholly unrecognis-

able except through an incision, but they appear most frequent in those cases in which the primary separation is great.

Distension of the joint by blood and exudate is the principal factor in maintaining separation of the fragments; indeed, it is the only one in a recent case which can prevent approximation by the fingers when the joint is in full extension.

Stimson thinks the agency of the quadriceps in this separation has been much over-estimated. He has repeatedly observed that when the fracture has been exposed by incision that active contraction of the muscle did not separate the fragments more than a quarter of an inch if the foot was held a few inches above the bed. Later in the case, however, the gradual retraction of the muscle and of the ligamentum patella may create an interval which cannot be closed by any permissible amount of traction.

Inability to flex appears to be due to retraction of a portion of the capsule attached to the upper fragment and of the fascia lata on the outer side, and sometimes to enlargement of the patella itself, the result of hypertrophy of the fragments, or a short, stiff band between them which makes the bone too long to turn over the curve of the condyles. This retraction of the capsule is presumably the result of cicatrisation along its loose edge and would not be lessened by the open method of treatment.

Of non-operative treatment it may be said that the effusion may be removed by the pressure of an elastic bandage maintained for a few days, or even for a fortnight if it keeps the fragments close together.

Stimson will find many to agree with him when he argues that the results obtained by properly employed non-operative methods are in the great majority of cases satisfactory.

In a surgical operating room, an operating surgeon, with fully trained assistants and a well proven technique, may be justified in certain cases in treating fracture of the patella by incision, but the circumstances of the injury must indeed be exceptional to render it advisable for a general practitioner or an occasional surgeon to adopt a method so fraught with danger.

Curvature of the Neck of the Femur, Sometimes Called "Coxa Vara."

Frazier. "Curvature of the neck of the femur, sometimes called 'Coxa Vara.'"—*Annals of Surgery*, July, 1898.

An unusual condition, not described in English surgical text books. Exhaustive papers by Hofmeister and Kocher appeared in 1894. They had collected reports of forty cases and Frazier has collected about forty more. It may be congenital, but generally appears in

youth or in young adults. The neck of the femur is turned down, the trochanter rises above Nelaton's line, the base of Bryant's triangle is shortened and the limb, measured from the anterior superior spine of the ilium, is found to be shortened. The disease appears insidiously, frequently without any apparent cause, exceptionally following some slight traumatism. It generally occurs in those whose occupation requires them to stand a great deal and to carry heavy weights. The first symptom noticed is fatigue, and then vague pains in the limb. The pain becomes more severe, and soon limping results from the shortening Finally the motion of the joint is restricted, and stooping becomes difficult. It is often a year or two before the patient consults a physician. The pain is confined to the hip or may radiate to the knee.

These patients are, as a rule, well nourished and well developed, although in some cases the skeleton has not developed commensurately with the muscular tissue. Atrophy of the muscles of the thigh on the affected side is always present to a greater or less degree. There is sometimes a bluish red discolouration and chilliness of hands and feet on standing for any length of time with the hands hanging.

The attitude which the limb maintains is conspicuous and quite characteristic ; of sixty-eight cases in which the position of the limb was mentioned, in forty-three the position was that of outward rotation, six outward rotation and adduction, in five outward rotation and flexion, in two inward rotation and adduction, in one adduction and in one adduction and flexion. In eight the position was normal.

The cause cannot always be determined. The number of specimens obtained thus far for examination is only 16, and our accurate knowledge of the pathology is confined to examples of rickets, osteomalacia and arthritis deformans.

The condition, once developed, is permanent. There will always be a certain amount of shortening which will, at least, make the patient, walk lame.

In most cases it is a self-limited disease ; after the patient reaches adult life there will be no increase in the deformity.

The treatment includes, extension and massage, with attention to hygiene and the internal administration of phosphorus, if there are evidences of rickets. Operative interference is reserved for these cases in which the disability is pronounced, and this is especially true of the bilateral cases. Before the disease was understood resection of the head was performed. More recently Kocher, Hofmeister and others have advised a subtrochanteric osteotomy. Kraske recommends the extracapsular division of the neck of the femur.

Geo. E. Armstrong

Pharmacology and Therapeutics.

UNDER THE CHARGE OF A. D. BLACKADER.

Action of the Thyroid Gland.

HUTCHISON ROBERT. "Pharmacological Action of the Thyroid Gland." —*British Medical Journal*, July 16th. 1898.

CUNNINGHAM, R. H. "Experimental Thyroidism."—*Journal of Experimental Medicine*, March, 1898.

The recent promotion of the thyroid to an official position in the British Pharmacopœia, renders the present a suitable time to review its literature, and to enquire what is definitely known of its pharmacological action, and what is the bearing of that knowledge upon its use as a medicinal agent.

With regard to its action on *metabolism*, Dr. Hutchison says that it can be definitely stated that its administration increases oxidation in the body. Shortly after its properties began to be studied, it was noticed that the urine of patients taking it contained a large excess of urea. Later and more careful investigations showed that not only was the elimination of nitrogen much increased during the administration of thyroid, but that the amount eliminated very often considerably exceeded the amount ingested in the corresponding period of time; a certain indication that a tissue rich in nitrogen, presumably muscle, had undergone increased destruction. The loss in body-weight, however, was found to be greater than any mere destruction of proteid tissue would account for. Further investigations revealed a great increase in the amount of oxygen inhaled and of carbon dioxide given off, and the inference was drawn that thyroid leads to a greatly increased consumption of body fat. The products of the disintegration of the nitrogenous tissues appear in the urine almost entirely in the form of urea, while the products of fat destruction are eliminated as carbonic acid by the lungs, and water by the kidneys. The increase in the excretion of water during thyroid administration is very notable. Diuresis is often one of the first effects of the drug, and a considerable proportion of the loss in body weight at the outset of a course of thyroid treatment is to be attributed simply to loss of water Thyroid feeding appears to make the tissues drier, but on stopping its administration this loss of water is quickly replaced.

Knowing as we do from physiology that in the ordinary metabolism of the body carbohydrates and fats have a proteid-saving action, it is interesting to enquire if the administration of thyroid simply increases without altering relatively the metabolism of these tissues, or if it increases one more than the other. This question has very direct practical bearings as the thyroid has been frequently employed in the treatment of obesity. The ideal "antifat" would be a substance which increased the power of the tissues to consume fat, without at the same time causing an increased destruction of proteid. Under the administration of thyroid it is evident that both proteid tissues and fats tend to be broken down, but it is still undecided whether under thyroid stimulated metabolism fats still retain their power of protecting to some extent the proteids. Some recent writers assert that the thyroid has a specific action on the proteid tissues, and under its administration the proteid-sparing power of fat is suspended; while others consider that careful clinical observations on persons suffering from obesity show that great loss of weight can occur under its exhibition, while there is yet less nitrogen being eliminated than is ingested. Dr. Hutchison thinks it very probable that the increased elimination of nitrogen observed at the commencement of thyroid feeding is due to the destruction of circulating proteid, and that the fixed proteid tissues are only attacked when the store of fat has been considerably diminished, and considers it a practical inference, that when treating cases of obesity by thyroid, nitrogenous matter should be abundantly represented in the dietary.

In its action on metabolism, Dr. Hutchison considers the thyroid unique amongst medicinal agents. He knows of no other drug capable of increasing the oxidation processes of the body in the same way, and thinks its action may best be compared to the effect of muscular exercise, or to the effect of some of the toxins which produce fever, and which also appear to have a specific action on proteid metabolism. It has not yet been determined whether this action of the drug is exerted on the tissues directly or through the influence of the nervous system, but in favour of the latter view, is the very minute quantity of the substance which is sufficient to produce powerful effects.

Whatever its mode of action, its essential nature would seem to consist in a hastening on of the life history of the cells. Cell division occurs more rapidly, and the cell reaches maturity, and passes into old age in a shorter time than normal. The reverse of this occurs typically in myxœdema, where many of the cells never seem to reach a mature stage. Thus the subcutaneous tissue becomes filled with

cells in an embryonic stage; and when old hairs fall out, the cell division which should lead to the formation of new ones ceases to occur, and the patient becomes bald. In these cases the thyroid does good by stimulating the development, or life history, of the cells. In this way also may be explained its beneficial action in children of backward growth, and the good effect sometimes exerted in such skin diseases as psoriasis and ichthyosis, where the final death and casting off of the epidermic cells seems to be much delayed.

Reflecting that the secretion of the thyroid is constantly passing into the circulation, and thus controlling the metabolism of the body, one is tempted to speculate whether the different states of nutrition in different individuals may not be due to a varying activity in the secretion of their thyroids. In cases of simple goitre, Dr. Hutchison considers that the hypertrophy may be the result of an increased demand for the secretion in the system. The beneficial results which follow the administration of thyroid, more frequently in recently developed cases and when the subject is young, are to be explained by the artificial supply lessening the demand for the natural product. This view is to some extent confirmed by Bruns, who examined carefully the gland of a dog suffering from goitre, and found that it presented the characters of a gland which was over-secreting. After feeding with thyroid the hypertrophy passed away, and a microscopical section made then from the gland showed that it had again become normal.

The thyroid theory of exophthalmic goitre receives confirmation from the observations of Matthes, who finds that an examination of the respiratory and urinary secretions of persons suffering from this disease, reveal an increased metabolism, very similar to that which takes place under the administration of thyroid.

Experiments would also indicate that the thyroid may sometimes affect carbohydrate metabolism in such a way as to diminish the power of the tissues to utilise sugar.

In reference to the action on the *circulation*, perhaps the most constant of the effects observed following its administration is an increased rapidity of the heart's action. Indeed, the action of the drug can scarcely be said to be manifested, unless the pulse rise by ten or more beats per minute. Along with this increased rapidity other disturbances, such as irregularity, palpitation, or even syncopal attacks, have occasionally occurred during its continued administration. Curiously enough the experimental study of these effects has given entirely negative results. Strong solutions of iodothyrin and intravenous injections of colloid matter in the hands of several inves-

tigators have had no effect at all upon the strength, rhythm, or rate of the isolated frog's heart, or on the heart of rabbits, or dogs, *in situ*. A possible explanation of these negative results is that the heart is acted on secondarily by some substance produced during the exaggerated metabolism following thyroid administration.

The clinical fact, however, certainly remains, and renders caution necessary in the administration of thyroid to persons suffering from cardiac weakness. In cases of obesity, where fatty changes may have impaired the integrity of the heart muscle, this is especially necessary. This action may, however, render its exhibition of value in the treatment of cases of functional bradycardia.

Notwithstanding the experimental evidence that the active principle of the thyroid has no influence on blood pressure, the sphygmometer shows a slight fall in blood pressure in patients during its administration. The fall seems to be due more to enfeeblement of the heart than to any peripheral dilatation of blood vessels.

On the blood itself, small doses appear to produce no appreciable effect in healthy persons, but large doses cause an increased destruction of blood corpuscles just as of other cells. In myxœdema, on the other hand, the stimulus which thyroid feeding gives to all cell growth and division is manifested in the blood by a rise in the number of the corpuscles.

The *excretion* of the active principle of the thyroid appears to take place entirely by the kidney, and to be a gradual one; its action often persists for several days after its administration has been stopped. This persistence is not to be attributed to an absorption of the substance by the thyroid of the patient, for it is as noticable in cases of myxœdema where the thyroid is presumably inactive as in normal cases.

In reference to the *dosage* of thyroid, Dr. Hutchison considers that we have as yet no satisfactory method of standardizing its several preparations. One cannot do so by making a given quantity of a preparation equivalent to a given weight of fresh gland, because the amount of the active constituent present in a given weight of gland tissue may vary greatly. Nor can we take the colloid matter as the standard, for there is reason to believe that it, too, may be of varying composition. It has been suggested that the activity of thyroid preparations should be gauged by the amount of iodine they contain, but this also may prove fallacious for there is as yet no certain proof that the presence of iodine is essential to the activity of the thyroid. Practically, however, the difficulty is surmounted if the preparation be made from a sufficiently large number of glands. One finds that

the composition of the colloid matter, as met with in the market at present, is almost constant, and the thyroid powder of the new Pharmacopœia will doubtless be found to be so also, if prepared in fairly large quantities at a time.

Dr. Hutchison considers the new liquor thyroidei to be as good a fluid preparation as could have been devised, but regards the dose given in the Pharmacopœia (5-15 minims) as too small. Whatever the preparation employed, Dr. Hutchison considers it better to give it in small doses and frequently, than in large quantities at longer intervals.

It is also very necessary to feel one's way, beginning with small doses, and gradually increasing them. Idiosyncrasy plays a large part in the reaction which patients show to the drug, and the extent of the reaction in any particular case can never be foretold. Among the more important symptoms attributed to over-action and grouped by writers under the term "thyroidism" are headache, pains in the limbs, nausea, diarrhœa and palpitation. Several recent writers have ascribed most of these symptoms, not to any specific action of the thyroid, but to the presence in the preparation of toxic substances produced by putrefaction. While there unquestionably is a great liability to the presence of putrefactive toxins in preparations of the thyroid, in Dr. Hutchison's opinion the headache, pains in the limbs, and cardiac weakness, are either due to the specific action of the thyroid, or are the effect of some product of the exaggerated metabolism which it excites, and no degree of purity in the preparation is a guarantee that such symptoms will not arise. The nausea and diarrhœa, which are sometimes noticed, may in his opinion, be due to the presence of toxic products, the result of putrefactive changes in the glands. He thinks it decidedly open to question whether the method employed in the Pharmacopœia for the preparation of the powder ensures its freedom from these tox-albumins.

A. D. Blackader.

Obstetrics and Diseases of Infants.

UNDER THE CHARGE OF J. C. CAMERON.

The Birth of the Secundines.

ERVIN A. TUCKER, M.D., New York. "Birth of the Secundines."—*Am. Gyn. and Obstet. Journal*, May and June, 1898.

Diversity of opinion in regard to the ways in which the secundines are born, has led to great confusion in the statements made in the text-books on this point, hence Dr. Tucker's careful and elaborate study of 2,700 cases is most opportune.

These observations were made with the object of observing the relative frequency of methods of birth of the secundines, and the relation of these methods of birth to hæmorrhage.

It was sought to determine (1) in what way placentæ are most often born, when expressed by Credé method: *i.e.*, the relative frequency of the methods of artificial birth of the placenta; (2) in what way placentæ are most often born when expressed spontaneously; *i.e.*, the relative frequency of the methods of natural birth of placentæ.

Placentæ are born in five different ways, whether by artificial or natural methods.

In 33.9 per cent. the placenta was born "*edge first with the fœtal surface out, i.e.*, the edge of the placenta presented at the vulva generally in its antero-posterior diameter, and at the same time the convex fœtal surface came into view, the maternal surface being folded in and hidden from sight." The membranes are inverted (amnion outside, chorion inside) and the cord is not in the bag of membranes.

In 26.9 per cent. the convex fœtal surface of the placenta presented at the vulva first, the maternal surface being folded behind, and the membranes inverted. In this form the center of the placenta, instead of the edge, appeared first, its long diameter being transverse at the vulva.

In 22.2 per cent, the edge was born first with the maternal surface out, the fœtal surface being folded in and hidden. Usually the membranes covered the fœtal side and formed a bag, but occasionally the ammion separated and remained behind, while the chorion became inverted and covered the maternal surface.

In 8.0 per cent. the convex maternal surface, at or near its centre,

presented at the vulva, the fœtal surface being folded behind and coveredby membranes forming a bag, the chorion being outside,—the membranes not being inverted. In this case the placenta must turn, either in the uterus, or upper vaginal passage.

In 5.0 per cent. the edge of the placenta appeared at the vulva first both the fœtal and maternal surfaces being equally exposed.

The relative frequency of the various methods of expulsion of the placenta in Credé's and in spontaneous expression is shewn in the following table :

Credé.	Spontaneously.	
38.2 per cent.	32.9 per cent.	Edge first, fœtal surface out.
27.9 "	17.4 "	Fœtal surface first and out.
21.4 "	31.6 "	Edge first, maternal surface out.
7.6 "	14.1 "	Maternal surface first and out.
5.1 "	4.0 "	Edge first.

Thus the author concludes that the Credé method of expression favours the birth of the placenta by the fœtal surface out : while spontaneous expression favours birth with the maternal surface out.

A very able study of the relation the various methods of birth of the secundines bear to the quantity of blood lost, is made in the second part of the paper.

The conclusions reached by the author are all interesting, but only the most important can be referred to here.

Dr. Tucker found that the "average natural blood loss is 7.4 oz., when the placenta is expressed by the Credé method, within 20 minutes after the birth of the child, while it is 5.7 oz. when the placenta is expressed spontaneously within the same interval."

" Birth of the placenta with the maternal surface out increases the frequency and quantity of excessive blood loss in the third stage."

" Post-partum hæmorrhages are more frequent in spontaneous than in Credé cases."

The Action of the Vaginal Plug in Accidental Hæmorrhage.

L. Hastings Tweedy, F.R.C.P.S. "The Action of the Vaginal Plug in Accidental Hæmorrhage."

The value of the vaginal plug in the treatment of hæmorrhage has many opponents, but there is much to be said in its favour and Dr. Tweedy has advanced arguments which cannot be easily controverted.

The treatment is "routine" in the Rotunda Hospital since Dr. Smyly's mastership, and the value of the method has been thoroughly proved.

But vaginal plugging, as Dr. Tweedy points out, must be done carefully and methodically, in order to be successful. The use of cotton wool pledgets soaked in an antiseptic fluid, squeezed dry, and inserted without a speculum, having the patient in the left dorsal position, is the Rotunda method. In order to place the first pledgets carefully around the cervix and well in the fornices, the employment of a Sims' speculum would be an advantage. After plugging, a diaper is necessary, and a tightly fitting abdominal binder is advisable.

Dr. Tweedy asserts that such a plug, by pressure, causes the uterine arteries to be acutely bent, and thus controls the uterine circulation. The accumulation of carbonic acid gas in the uterus thus brought about, is an important factor in exciting uterine contractions. Thus by controlling the hæmorrhage and exciting uterine action favouring rapid dilatation of the cervix, the vaginal tampon properly employed is of undoubted value.

D. J. Evans.

Pediatrics.

UNDER THE CHARGE OF A. D. BLACKADER.

The Management of Hernia in Infancy and Childhood.

WILLIAM B. COLEY, M.D. "The management of hernia in infancy and childhood."—*Archives of Pediatrics*, April, 1898.

While disclaiming any intention of giving a paper covering the whole of the subject of hernia in children, Coley points out the scant attention paid to it by most surgical writers and the need of establishing some rules for the management of cases. The diagnosis in the majority of cases ought to give no difficulty. Occasionally, however, cases of hydrocele of the cord are mistaken for strangulated hernia. With a history of a "small globular or slightly oblong swelling, smooth and symmetrical in outline, tense and cystic" which has lasted for some time, and has never been reducible, hydrocele is conclusively indicated.

Treatment should be commenced as soon as the rupture is discovered, the common belief, that letting it alone until the child is a year old will do no harm, is unwarranted and dangerous, from the possible danger of strangulation taking place.

Mechanical treatment is to be considered first, notwithstanding the recent brilliant advances in the operative methods. A well tempered steel spring made as light as is consistent with the required support is preferred by Coley to the skein of yarn. The metal portion is covered with rubber tubing and the pad made of wood covered with chamois leather. It should be applied loosely so that the pad rests above the pubic bone and over the internal ring. The length of time during which it should be worn is a difficult question to settle. The practice at the Hospital for Ruptured and Crippled in New York is to examine the child at least once a month for the first few months, and not to leave off the truss until two full years have elapsed since the hernia was last down. If this does not result in a permanent cure, mechanical treatment gives place to operative.

By an analysis of 26,385 cases of hernia treated in the above mentioned hospital, Coley concludes that from 25 to 30 per cent. are not cured by trusses.

The main indication for operative interference, as already stated, is failure of the truss to benefit after from one to two years trial. Besides

this, operation should be undertaken in femoral herniæ, those irreducible or with adherent omentum, and cases in dispensary practice where want of care on the part of parents makes mechanical treatment futile. Bassini's is the method selected as giving less relapses ; the great danger is from the anæsthetic. The mortality is very low, less than one-fourth of one per cent. in upwards of 900 collected cases, including 300 by Coley himself, with one death from pneumonia. Seven cases of operation for strangulated hernia are reported. One only of these—the first—died. From a study of these cases he draws the following conclusions :

1. Strangulation in infants is more frequent than is generally appreciated.

2. It not unfrequently arises from the bad advise of the family physician to postpone wearing a truss until the child is a year old.

The American Pediatric Society's Collective Investigation on Infantile Scurvy in North America.

This is the report of a committee appointed at the 1897 meeting of the Society to undertake the work of bringing together and tabulating all the cases obtainable, in order that more light might be thrown upon the disease, especially its etiology.

In all 378 cases seen by 138 observers were collected, and some of the points concerning which information was adduced are as follows :

Sex.—Males and females were about equally divided.

Age.—Cases were reported from three weeks up to nine years, but over 75 per cent. were between seven and fourteen months, inclusive.

Social position.—The occurrence of 83 per cent. in private practice as against 17 per cent. in hospital practice, shows the much greater tendency to the disease among the well-to-do, a fact which has been pointed out before. The hygienic conditions, too, were described as good in the vast majority of cases.

Previous health.—Of preceding diseases none could be looked upon as an etiological factor, indigestion was frequently present, but was rightly considered, rather as a result of the causes producing the disease, than a cause in itself.

Family history.—This seemed to have no bearing on the disease.

Diet.—In 275 cases, diet in the opinion of the observers was considered directly responsible for the production of the disease. The kind of food used at or shortly before scurvy developed varied greatly. In 12 cases breast milk formed the whole or greater part of the dietary. Milk, raw or prepared, was the food in 162 cases and of these sterilized milk accounted for 115, and pasteurized for 21. Only 24

cases had been fed upon non-proprietary amylaceous food, but 214 cases or 60 per cent. had been taking proprietary foods. Of these Mellin's Food was used in 83 cases, Malted Milk in 48, Condensed Milk in 38, Reed & Carnrick's Soluble Food in 13, and Imperial Granum in 6. Besides these ten other proprietary foods had been used in one or two instances each.

Symptoms.—Of the most prominent symptoms, pain on motion and handling was most constant, being present in over 80 per cent. and in one third of these pain was also present when at rest. This symptom gives rise to another, paralysis or pseudo-paralysis or rigidity of the limbs from the pain caused by motion. The unnatural position of the limbs, weakness of the back, and depression of the sternum, emphazised by Barlow as characteristic when present, were noticed in a considerable proportion of cases. Swellings either in the long bones or about the joints formed a prominent feature and in 49 cases proptosis was noted.

With regards to the *condition of the gums* the evidence collected bears out the generally accepted opinion that sponginess or swelling is almost a constant symptom. Thus, in only 16 cases was it distinctly stated that the gums were not affected. Of 45 cases in which there were no teeth, in 21 or nearly one-half the gums were normal. The committee make the rather misleading statement "that affection of the gums may occur equally well when there are no teeth as when teeth have developed." For, if, as the figures show, the gums were affected in 86 per cent. of those with teeth and in only 53 per cent. of those without teeth, the presence of teeth must be taken as the factor determining the increased liability to this symptom in the former class.

Hæmorrhages, cutaneous and from mucous membranes, fractures, fever, bowel movements, urine, and anæmia, were all considered separately without anything new of importance being elicited.

The association of rickets with scurvy is shown to be no more than the common origin of both in a faulty diet.

Treatment.—The quick response to appropriate treatment is one of the striking features of the report. "There is certainly no disease for which a more specific treatment can be said to exist."

Marked improvement took place in 80 per cent. of the cases within one week from its institution, of the 326 cases of which records suitable for study were received, the method of treatment in three-fourths was by change of diet with or without drugs, no fruit juice being employed. An elaborate series of tables is given from which are drawn the following conclusions as to the etiology and treatment:

1. That the development of the disease follows in each case the prolonged employment of some diet unsuitable to the individual child and that often a change in diet which at first thought would seem to be unsuitable may be followed by prompt recovery.

2. That in spite of this fact regarding individual cases, the combined report of collected cases makes it probable that in these there are certain forms of diet which were particularly prone to be followed by the development of scurvy. First, in point of numbers here are to be mentioned the various proprietary foods.

3. In fine, that in general the cases reported seem to indicate that the farther a food is removed in character from the natural food of a child, the more likely its use is to be followed by the development of scurvy.

Twenty-nine of the 379 cases were fatal, and in six the results of autopsies were reported.

The report is signed by Dr. J. P. Crozer Griffith, Charles G. Jennings, and John Lovett Morse.

Dr. Augustus Caillé while agreeing with the conclusions, submitted a minority report based upon the cases he had collected in which he expresses the opinion that scurvy is a chronic ptomaine poisoning due to the absorption of toxins and following the prolonged use of improper food, abnormal intestinal fermentation being a pre-disposing factor. Sterilzing, pasteurizing, or cooking of milk food he does not consider *per se* responsible for the scurvy condition.

G. Gordon Campbell.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron, 903 Dorchester street, Montreal.]

The Canadian Practitioner.

June, 1898.

1. Ontario Medical Association; The President's Address. WM. BRITTON.
2. Asylum *versus* Hospital. JAMES RUSSELL.
3. Clinical Report of Cases Illustrating Successful Operations Under Adverse Conditions. A. PRIMROSE.
4. Appendicitis with Perforation. C. M. SMITH.
5. The Various Operative Methods of Dealing with Eyes Lost Through Injury or Disease. G. HERBERT BURNHAM.

2. RUSSELL gives a rapid review, historically, of the evolution of the asylum and its sister charity, the hospital, and points out the uses and abuses of each at the present time. He shows that the word hospital, in its modern application, is a misnomer, when applied to an institution for the insane, and attempts to prove that too much attention is being paid to the physical and too little to the mental treatment of insanity. The hospital idea is the outcome of this tendency. Too much is attempted by medication and surgery, and too little by mental stimuli, forgetting that the reaction of the mental on the physical is quite as potent as its converse. To the great mass of the insane hospital treatment is useless, except in individual cases or as emergency may require. The hospital, however, is an important adjunct to every asylum. The necessity for mental athletics is equal to the necessity for physical athletics, if an all round development is to be maintained. How to harmonize them both in proper proportions is the fundamental basis of all treatment of the insane.

3. PRIMROSE relates several cases which illustrate that successful results may occasionally be obtained though the patient may be suffering from some grave constitutional trouble which would make operation unjustifiable were it simply one of expedience. The first case was one in which the patient was suffering from extreme cellulitis of the leg and chronic Bright's disease, and yet an amputation through the knee-joint was successful, so that the patient eventually left the

hospital with the wound soundly healed. The second case was one in which the operation of amputation above the ankle was successfully performed for tuberculous disease of the tarsus in a patient with pulmonary tuberculosis, both lungs being affected. The third case was the record of the operation of lithotomy in a frail old man, eighty-two years of age.

4. SMITH describes the case of a young man who suffered from acute appendicitis followed by abscess. This was opened, the appendix removed and drainage introduced, and a good recovery followed The case illustrated the difficulties that beset the general practitioner and surgeon in country places.

5. BURNHAM describes the various methods of dealing with eyes lost through injury or disease. The principal reasons why an eye so lost has to be dealt with in an operative way are the danger of sympathetic ophthalmia of the other eye, sometimes on account of the severe pain in the lost eye, or for cosmetic purposes. The operative methods described are, enucleation, evisceration, Mules' operation, and optico-cilio neurotomy.

The Canadian Journal of Medicine and Surgery.

June, 1898.

1. Pulmonary and Other Internal Hæmorrhage. ALEXANDER MCPHEDRAN.
2. Hip Disease—A Clinical Lecture. B. E. MCKENZIE.
3. Instructive Statistics. J. J. CASSIDY.
4. The Obstetric Binder. W. J. WILSON.
5. The Bearing of Pathological Processes on the Therapy of Morbid Processes along the Genito-Urinary Tract in the Male. THOMAS H. MANLEY.

1. MCPHEDRAN draws attention to the fallacies of much that is popular in the treatment of this alarming condition. The natural history of the hæmorrhage appears to be usually overlooked; hence its arrest following the use of the means adopted is attributed to those means. Of all the remedies, ergot is the most widely used, probably on account of its well known action in arresting uterine hæmorrhage. Ergot stimulates the vaso-motor centre in the medulla, thus increasing general blood pressure, hence it is clearly injudicious to give it in cerebral or pulmonary hæmorrhage. In intestinal hæmorrhage it is injurious on account of its action on unstriped muscle fibre, which causes increased peristalsis. The influence of a remedy in concontrolling internal hæmorrhage must depend (1) on its power to lower blood pressure, which is equivalent to increasing the resistance

to the escape of blood; (2) on its power of increasing the coagulability of the blood. For the accomplishment of the first object we have opium, which quiets the heart and circulation, and the nitrites, which lower the blood pressure by relaxing the peripheral vessels. Of the remedies of the second class calcium chloride and iodide of potash are the best examples. In arthritic hæmoptysis, drugs that lower arterial tension are especially indicated.

3. CASSIDY makes some instructive comparisons between the vital statistics for 1897 of Toronto and Montreal in Canada, and Philadelphia and Chicago in the United States:

	Births per 1000.	Deaths per 1,000.	Marriage per 1,000.
Montreal	32.43	26.47	6.9
Toronto	22.25	15.68	8.19
Philadelphia	24.37	18.72	12.67
Chicago	17.39	13.46	8.43

A survey of the diseases which produce the large mortality of Montreal does not reveal many causes demanding special sanitary investigation. Typhoid fever caused deaths in ratio of 30.52 per 100,000, which should demand sanitary investigation and improvement of the water supply. The deaths of children under five years of age are 47.16 per cent. of the annual mortality, which appears to be excessive.

4. WILSON is very much in favour of a tight, well applied binder, on account of the needed support to the abdominal organs and for the comfort that it affords the patient. When there is eclampsia, and it becomes necessary to lower arterial tension, the binder had better be left off. During the six or eight weeks following parturition, if the binder can be used so as to support the intestines from below, and thus remove some weight from the uterus, the woman is given a material aid towards her final recovery.

The Canadian Medical Review.

June. 1898.

1. A Comparison of Lumbar and Inguinal Methods of Colostomy. HERBERT A. BRUCE.

1. BRUCE describes the operation of cælio-colostomy or inguinal colostomy, which is coming steadily into favor and is replacing to a very large extent the lumbar operation. Its advantages are that it is easier, the site and extent of the disease can be ascertained, it is easier to draw out the intestine and make a satisfactory angle and spur, and the position of the anus is more convenient for the needful attention. The best and simplest method of performing the operation is Greig

Smith's modification of the Maydl-Rèclus operation, in which no sutures are used.

The Canada Lancet.

May, 1898.

1. Remarks on Modern Therapeutics. J. T. Fotheringham.
2. Notes of a Rare Case of Interstitial Nephritis. Alfred J. Horsey.
3. On the Care and Modification of Milk for Infants' Use. L. M. Yale.

1. [An interesting address on the advances of therapeutics.]

2. Horsey gives the details of the case of a young man aged 22, whose urine showed the enormous quantity of 80 per cent. of albumen and whose sight was much impaired by retinitis of a disintegrating character, with numerous hæmorrhages. He had been led to seek advice to know why his sight was "blurred," which he had noticed for only a week, yet it had declined to $\frac{1}{10}$ and $\frac{1}{20}$ from normal in the right and left eye respectively. He had had but few symptoms of ill health, excepting a delicate stomach, occasional vomiting and shortness of breath on exertion. He died eighteen days after coming under observation, the most distressing symptom being dyspnœa. The urine retained its normal acidity, specific gravity and quantity, but was highly albuminous throughout. No casts of any kind were found. The case demonstrates the usefulness of routine ophthalmoscopic examination in obscure cases.

3. Yale describes the methods followed in the preparation of modified milk in the milk laboratories, and gives some of Holt's tables and formulæ for rendering easy the calculation of each ingredient, so that home modification may be carried out.

The Dominion Medical Monthly and Ontario Medical Journal.

June, 1898.

1. The President's Address. William Britton.
2. The Canadian North-West and Rocky Mountain Districts in the Treatment of Tuberculosis. Peter H. Bryce.
3. Hyper-Resonance of the Lungs a Premonitory Symptom of Tuberculosis of the Lungs. W. C. Heggie.

2. Bryce describes the nature of the country and the climate of the Canadian North-West. He says that to anyone familiar with the climatic qualities of the Great West of Canada, it will seem plain that in the prairie region rising from the lands of Manitoba westward until Banff is reached at a height of 5,500 feet, every degree of height may be had which may be found most suitable to any particular case

of tuberculosis; while in the 500 miles—extending through the sea of mountains made up of the three ranges, with the intervening plateaus between, from Banff to Vancouver—there is infinite variety of heights and local conditions to tempt the most fastidious searcher after health. As yet the country is hardly known even to Canadians as a health resort, owing to its distance from the Eastern Provinces, and still more to its newness and its few facilities for the accommodation of travellers and invalids. What, then, is first required is the knowledge spread amongst the medical profession of the remarkable climate of that region, and along therewith the establishment of sanatoria under precise medical regulation. Possessed of so fortunate a gift of Nature, Canadians will do well to make provision whereby these health-giving qualities be not injured in their good repute, as has occurred notably in California by the absence of means for regulating the tuberculized who go there, and which have caused many instances of house-infection amongst the resident population.

3. HEGGIE is of the opinion that when a patient suffers from a cough associated with a hyper-resonant condition of the lungs, and is exposed to tuberculous infection, that person will develop tuberculosis. The question then is, are these symptoms those of already existing tubercle, or are they due to a weakened condition of the system with atrophy and resulting dilatation of the air cells? He is inclined to believe that in these cases there is first a debilitated system causing atrophy of the walls of the air cells, then as a result a dilatation of these cells and hence hyper-resonance of the lungs. Several cases are cited to illustrate these views.

The Maritime Medical News.

June, 1898.

1. Artificial Feeding of Infants. WM. NORRIE.

1. NORRIE discusses at length the problems in infant feeding. The various milk mixtures and patent foods are described, but the question of "modified milk" is not touched upon.

Canada Medical Record.

May, 1898.

1. Pregnancy following Ventrofixation with Improvements in Technique. A. LAPTHORN SMITH.
2. Clinical Lecture on Bilateral Abductor Laryngeal Paralysis. GEO. T. ROSS.

June, 1898.

3. Gynæcological Notes from Paris. A. LAPTHORN SMITH.

1. LAPTHORN SMITH is of the opinion that pregnancy and labour

are much less influenced by Alexander's operation than by ventrofixation or suspensio uteri. Alexander's operation should therefore be preferred whenever the uterus and appendages are free from adhesions.

2. Ross, in the course of a clinical lecture on bilateral abductor laryngeal paralysis, says that the most important facts are: first, the motor nerves of the larynx have so long and tortuous a course that from their medullary origin to their endings in the laryngeal muscles they are exposed to an enormous number of various pathological influences; second, the laryngeal abductor paralysis caused by any of these influences may, and in a good many cases does, remain for a long time the only positive sign of these various pathological processes; third, this paralysis, if unilateral, may in no way proclaim its existence, but must be sought for, if one does not wish to miss the opportunity of making an early diagnosis in many of these cases.

Kenneth Cameron.

Reviews and Notices of Books.

An American Text-Book of Genito-Urinary Diseases, Syphilis, and Diseases of the Skin. Edited by L. Bolton Bangs, M.D., Consulting Surgeon to St. Luke's Hospital and the City Hospital, New York, and to the Methodist Episcopal Hospital, Brooklyn ; Visiting Genito-Urinary Surgeon to St. Mark's Hospital, New York ; Late Professor of Genito-Urinary Diseases and Venereal Diseases, New York Post-Graduate Medical School and Hospital ; and W. A. Hardaway, A.M., M.D., Professor of Diseases of the Skin and Syphilis in the Missouri Medical College, St. Louis ; Physician for Diseases of the Skin to the Martha Parsons Hospital for Children, and to St. John's Hospital, St. Louis. Illustrated with 300 engravings and 20 full page coloured plates. Philadelphia : W. B. Saunders. 1898.

This volume is the latest addition to the series of American Text-Books issued by W. B. Saunders during recent years. There are 47 contributors in all, selected with care as recognised American authorities on their several subjects. As the title indicates, there are in reality two separate works, one on genito-urinary diseases and syphilis, and one on diseases of the skin. The first part is introduced by an article on urine analysis, a term which is more correct, and we think in every way preferable to the ordinarily used one of "urinalysis." It gives a simple method for examination of the urine and a description of the changes found in the various diseases of the urinary tract which are dealt with in the first part of the work. The diseases of the genito-urinary system are then discussed in anatomical order, beginning with the penis and concluding with the surgical diseases of the kidney and functional diseases. The chapter upon diseases of the ureter by Dr. Christian Fenger and Dr. S. C. Stanton is an excellent presentation of the subject, the surgery of which is now attracting considerable attention. The chapter on surgical diseases of the kidney, by Dr. C. R. Bolton, should also be referred to as forming one of the best in the book.

Syphilis is treated in seven chapters, comprising 142 pages, and including not only the cutaneous lesions, but also syphilis of the body generally. A chapter by Dr. Hammond on syphilis of the nervous system is well written, but one cannot help feeling that it would be better not to attempt to condense such a vast subject within the limits allowed in a work of this character. The same may be said concerning the chapter on syphilis of the eye. Dr. R. H. Greene, writing upon treatment, considers that the disease cannot be aborted by early treatment, or by the excision of

the primary sore, and strongly urges the necessity of deferring all specific treatment until both patient and physician are thoroughly convinced that syphilis is present. He prefers to use the proto-iodide of mercury pill, and is opposed to the combination of mercury and opium advocated by many English writers, notably Jonathan Hutchison. With the internal medication he would combine external applications either by inunctions or baths and fumigations. In the later stages iodide of potash is recommended, but here, as in many other instances, the exact dosage which one may safely employ in refractory cases is left to the judgment of the reader. Large doses are recommended, but no indication is given of what amount may be resorted to before one ought to conclude that the disease will not yield to its influence.

The part relating to skin diseases comprises 400 pages, the classification adopted being Crocker's modification of Hebra's method. The descriptions are necessarily short and very much condensed, but will be found of value to the practitioner who wishes for just such an arrangement rather than to the specialist.

The illustrations are uniformly good and the general get-up of the book is excellent. Of the coloured plates, however, such cannot be said. They contrast very unfavourably with the half-tone reproductions of photographs which are gradually replacing them in works of this class and here, as is generally the case, the advantage that would be gained by having the colours of lesions depicted is lost through the seeming impossibility of correctly reproducing them. G. G. C.

Cutaneous Medicine; A Systematic Treatise on the Diseases of the Skin. By Louis A. Duhring, M.D., Professor of Diseases of the Skin in the University of Pennsylvania; Author of "A Practical Treatise on Diseases of the Skin," and "Atlas of Skin Diseases." Parts I. and II. Illustrated. Philadelphia; J. B. Lippincott Company. 1895 and 1898. Charles Roberts, Canadian Agent, 593A Cadieux Street, Montreal.

The first volume of this work, issued in 1895 deals with the general anatomy, physiology, symptomatology, etc., as well as general ideas regarding prognosis and treatment. It received on every side the most favourable criticism, and the publication of the second part on "special diseases" has been looked forward to as likely to add to the already large list of American treatises on dermatology one of more than ordinary merit. Such is indeed the case, and one hopes that the intervals between succeeding volumes will not be as long. Volume II. treats of the classification, and of the anæmias, hyperæmias and inflammations in part.

The method of classification adopted is the authors own modification of Hebra's, a pathologico-clinical one, which he supports by strong arguments in an article on the subject in the March number of the *Journal of Genito-Urinary and Cutaneous Diseases*. He does away altogether with

the class of "parasitic diseases," and introduces them under inflammations as two subclasses, those due to the phyto-parasites and those due zoo-parasites. The large class, also, of diseases of the appendages is left out, each disease being classified according to its pathological affinity, alopecia, for example, being included in the atropies, and acne and sycosis under inflammations. Though this, in a measure, simplifies the classification and shows the proper place for almost all of the diseases included by Hebra in the two classes mentioned, it leads to some difficulties. Thus it is not apparent why pediculosis corporis should be included under inflammations, and pruritus, which necessarily produces the same lesions, under the neurosis, although the etiology of the two is of course different.

Beginning with a few pages on anæmias and hyperæmias, and the various forms of non-inflammatory erythema, the exudative erythema, erythema multiforme, nodosum and urticaria are described. Then follow 110 pages on eczema illustrated by 43 full page drawings. A general description of the cardinal features is first given and the fixed types or "lesional varieties" described as erytematosum, vesiculosum, pustulosum and papulosum. As subvarieties of these we have madidans, rubrum, squamosum and seborrhoicum, the last named being dismissed with a short description on a single page. Another group of still other varieties includes fissum and verrucosum, and acute, subacute and chronic eczemas. After an exhaustive review of the complications, pathology, diagnosis, and treatment, one has a still further elaboration of the subject by 25 pages on the "regional forms" of this protean disease.

Impetigo is divided into simplex and contagiosa and distinguished from eczema pustulosum. Ecthyma is treated as a clinical entity, as is Hebra's impetigo herpetiformis, the impetigo of pregnancy. Dermatitis herpetiformis, pemphigus, and herpes simplex and zoster, complete this volume. Gilchrist's microscopic drawings and descriptions of the pathological changes in many of the inflammations form a feature of the book which deserves special praise.

Most of the illustrations are half-tone reproductions from photographs. They are much more satisfactory than those taken from water colour drawings. G. G. C.

International Clinics.—A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology and Dermatology, and specially prepared articles on Treatment and Drugs. Edited by JUDSON DALAND, M.D., Philadelphia; J. MITCHELL BRUCE, M.D., London, England, and DAVID W. FINLAY, M.D., Aberdeen, Scotland. Volume I and II. Eighth Series, 1898. J. B. Lippincott Company, Philadelphia: Canadian Agent, Charles Roberts, Montreal.

Among the contributors in these volumes may be mentioned the names of T. McCall Anderson, A. H. Freeland Barbour, J. W. Ballantyne, C. A.

Ewald, Byrom Bramwell, Norman Bridge, Henry C. Coe, N. Senn, R. von Jaksch, W. Hale White, Professor Hayem, Alexander James, Paul F. Mundé, Graham Steel, Chas. G. Stockton, Professor E. Von Leyden, and many others both in America and England.

Such names as these bespeak the high class matter which these volumes contain. It may be noted that the International Clinics in these numbers quite exceed former productions from the standpoint of practicality.

Each volume under the head of Drugs and Remedial Agents, has an article on digitalis. In the first, the subject is treated from the standpoint of a diuretic by Nestor Tirard. In the second, J. N. Hall gives suggestions as to the use of this agent.

Under Treatment such subjects as treatment of tuberculosis, whooping-cough, chlorosis, puerperal sepsis, scabies, acute heart failure in chronic heart disease, and acute inflammatory middle ear disease, as well as other subjects are dealt with.

Under the division for Medicine, clinical lectures on gastralgia, myocarditis, sprue, atonic or nervous dispepsia and its treatment by intragastric electrization, tubercular pleurisy, aortic disease of the heart, weak heart, malarial fever in infants and children, ulceration of the pylorus and its consequences, dilatation of the stomach with remarks as to the treatment may be found with others of almost equal interest.

Neurology occupies rather a small space, but four articles being found in this division. They are lectures on spinal irritation, general paralysis as met with in hospital practice, toxic polyneuritis and arsenical neuritis.

The Surgical subjects include among others, umbilical hernia, external and internal urethrotomy for retention of urine, syphilitic stricture of the rectum, acute osteomyelitis in young children, the etiology and classification of cystitis, trephining for traumatic epilepsy, the X rays in surgery, and cirrhosis of the liver.

That portion of the clinics devoted to Gynæcology and Obstetrics contains articles on the treatment of ovarian cysts complicating pregnancy and labour, a study of four cases of pyosalpinx, sterility, placenta prævia, epithelioma of the vulva, uterine hæmorrhages.

The divisions of Ophthalmology, Laryngology, Rhinology, and Dermatology each contains interesting articles or clinical lectures upon topics of much practical value.

Two important features of the International Clinics which have always made them popular and much to be desired by physicians, are possessed by these volumes, now under review, even more prominently than heretofore. The Clinics bring all readers of them into the presence of the patient and the clinician in such a way as to impress the student practitioner with the chief features of the disease discussed and show at the same time the clinician's method of investigation of the case and his manner of dealing with the points of diagnosis and treatment.

W. F. H.

Correspondence.

DISTRICT REPRESENTATION IN THE PROVINCIAL MEDICAL BOARD.

To the Editors of The Montreal Medical Journal.

Sirs:

The recent election of the governing board of the College of Physicians and Surgeons indicates almost a unanimous wish on the part of the members of the college for a change in the system which has heretofore been in practice in the election of the governors at the triennial meetings.

The proxy system has been pronounced upon by the profession of the province, and has been declared to be a failure as a means of representing the popular will in the selection of governors.

Nothing less than local or district elections will satisfy the members of the college. With district elections every governor will be responsible to, and in direct contact with the electors. Mutual consultations and advice as to the requirements of the profession, an increased interest in the meetings of the Board, in short, a governing body representing the ideas of the majority of the profession in the province will result from district elections.

The legislation which will be asked for, requires careful preparation. As our judicial districts vary considerably in their professional population it will be necessary to have a proper census of each district. There are twenty judicial districts in the province with a very sparse medical population in some of them, while other large centres are very much conjested, and it will require certain combinations of some districts and subdivisions of others in order to elect the thirty-four governors and procure an equalization of representation.

As to the mode of conducting district elections there are two systems which can be followed. The one is a direct election at a central place or the *chef lieu* of the district. This is the plan followed by the bar, and I believe by the notaries, who meet at regular stated intervals and elect their officers directly—in the case of the bar the district batonnier becomes a member of the Provincial Council or Central Governing Board. I understand that this works satisfactorily with the bar but the medical profession is differently situated and I

doubt if this plan would work smoothly, as it would be quite impossible for all the members of the college in a district to assemble at a central place on a certain day. The result, I believe, would be that only a portion of the vote would be polled, and a certain number of electors would be disfranchised.

The other plan would be an election by ballot. The sheriff or clerk of the court of the district could be appointed a returning officer. Each qualified member of the college would receive a ballot from the secretary a week or ten days prior to the day fixed for the election, which he can prepare properly and forward to the returning officer either in person or by registered post, at any time between the receipt of the ballot and the day fixed for the election. This plan would secure every member of the college in his right to vote.

Such a system would probably lead to the voluntary formation of primary meetings in each district, for the purpose of nominating candidates. I would not suggest an official nomination, but simply a voluntary meeting at any suitable time previous to the election. Where there are district medical associations already in existence these would form an admirable means of nominating candidates, and the adoption of this plan I have no doubt would lead to the formation of medical associations in each electoral district. This is all secondary, the main feature of the plan is, that every member of the college in the province should have the privilege of voting directly for the candidate whom he thinks would represent the best interests of the profession as a member of the Governing Board.

C. L. Cotton, M.D.

Cowansville, August, 1898.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXVII. AUGUST, 1898. NO. 8.

DOMINION REGISTRATION.

If we are not mistaken, the movement in favour of Interprovincial Reciprocity or Dominion Registration of members of our profession has at last, with the Quebec meeting of the Canadian Medical Association, reached a point at which all parties are ready to join heartily in bringing to an end the wholly unsatisfactory condition under which the profession has found itself ever since Confederation. Last year saw, it is true, a most important advance, when at the Montreal meeting of the Association the delegates appointed by the Medical Councils of all the Provinces of the Dominion agreed upon a scheme of Interprovincial Registration.

But, as we all know, there are difficulties in the practical working of the scheme, difficulties which a year's consideration and discussion have not greatly lightened.

Another and broader plan was recommended in the report presented to the Association at Quebec by the provincial delegates, a plan which has the great advantage of lifting the subject out of the narrow and narrowing confines of provincialism into the higher atmosphere of what concerns the whole Dominion. That report we publish on another page. Briefly, it is recommended that, as at present, each province be allowed without restraint to control medical education and medical matters through the agency of its Medical Councils. Each province shall still determine for itself what may be spoken of as the minimum qualification permitting practice within its borders, and it is implied that every practitioner in any province, however qualified, shall pay the regulation dues of the College of Physicians and Surgeons or Medical Council of that Province. But if a student desires to qualify himself to practice at any point, and in any province of the Dominion, then, upon the completion of the stipulated course he shall present

himself before a body of Dominion examiners. Thus a student may elect from the start to qualify for practice in one province or for practice in the Dominion at large. And not only this, but if the scheme be carried through, then, at last, the Canadian graduate passing the Dominion Board will be qualified to practice throughout the length and breadth of the Empire. In simple justice to those already qualified it is inevitable that they also must be permitted, upon application, to obtain the Dominion license.

The scheme is bold and masterly, and we fail to see why any objection should be made to it on the part of our profession. The powers and the resources of the provincial colleges are retained—the colleges themselves are given a voice in the appointment of the Dominion Board of Examiners, and the profession throughout Canada becomes a united body. By the act of Confederation, the various provinces are given supreme control of all educational matters. In medicine the control of educational matters in each province is entrusted to the profession, acting through the Provincial Councils. It is wholly within the rights and powers of the Council, to agree upon one common course of education leading up to a Dominion examination, while further, it is at least a moot point whether the provincial control of educational matters of necessity, and implicitly, includes the power of conferment of licenses to practice in the various professions. The provinces, by the powers given to them, are entitled to demand that no one shall practice who has not undergone a certain minimum and specified training, but it seems to us that they will accept Dominion registration just as they now accept all who are duly registered in Great Britain, unless their medical act contains a clause definitely annulling rights given to practitioners registered in the mother country by the Imperial Parliament.

Altogether the Quebec meeting should mark an epoch in the medical history of the Dominion, and we who, upon principle, of late sturdily opposed Dr. Beausoleil in another connection, are rejoiced to congratulate him now upon the fact that under his presidency so notable and statesmanlike a scheme should have been evolved.

It is interesting in this connection to refer back to Dr. Roddick's presidential address at the opening of the meeting of the British Medical Association in this city a year ago. His remarks are so pertinent that we do not hesitate to quote them in their entirety. Speaking of medical legislation in Canada he declared :—" When the " British American provinces became confederated in 1867, under the " British North America Act, the governance of educational matters " was taken away from the Federal authorities and handed over to

"the provinces each to look after them in its own way. In conse-
"quence we have since had a curious complexity of Medical Legisla-
"tion, there being practically no uniformity amongst the provinces in
"regard to standard of study or qualification for practice. Each
"province has its own medical board or medical council, as the case
"may be, which has the power to grant license to practice either after
"examination or on simply presenting the diploma of certain recog-
"nized universities. In the provinces of Ontario and British Colum-
"bia an examination is exacted; in the others the license is given
"under certain restrictions on presentation of the degree, although in
"the Maritime Provinces an examining board is now about to be
"established. In this way, as can readily be seen, a Chinese wall is
"built round each province, and the frontier is carefully guarded so
"that it is unsafe for a medical man to pass from one to the other
"unarmed with a license, because of the risk of fine or even impris-
"onment. Such a condition of affairs is hardly credible and probably
"exists nowhere else to the same extent. What is the remedy?
"Two remedies have been suggested—either the establishment of a
"central examining Board in each province with a uniform standard
"of matriculation and a uniformly high standard of curriculum which
"shall in time lead up to a general scheme of reciprocity: or, secondly,
"a Dominion Examining Board. The first scheme is at present under
"serious consideration; although there are many difficulties in the
"way of its accomplishment, no one of them is insuperable, however,
"providing a spirit of conciliation prevails. The second alternative
"(a Dominion Examining Board) would in many respects be more
"desirable, because not only could the licentiate practise in any part
"of the Dominion, but he could register in Great Britain, and thus
"receive recognition all over the Empire. As you are doubtless
"aware, we, as a profession, suffer in this country from being inhab-
"itants of provinces which are confederated. Under the Medical Act,
"now of some twelve years standing, it has been decided in effect
"that the Medical Council of the United Kingdom can recognize the
"degrees of universities situated in autonomous Provinces only. As
"a consequence, Australians obtain privileges which are denied to us,
"being permitted to register in Great Britain without examination.
"We are being punished for belonging to a colony whose form of
"Government is recognized to be in advance of theirs and likely to be
"imitated by them. . . . Let common school education go to
"the various provinces if you will, but for the profession of medicine
"(and doubtless law also) there should be a uniform standard of
"matriculation, a uniform curriculum of medical studies, and one

"Central Examining and Registering Board composed of the best "men from all the universities. We hope in Canada to reach that "ideal at no distant date; in fact I have the very best authority for "stating that it is not impossible of accomplishment. Some scheme "of reciprocity first arranged would doubtless make the task less "difficult, but failing that, our duty is to arrange for some legislation "which shall give our better and more ambitious students an oppor-"tunity of passing a Dominion Licensing Board (or whatever "it may be called) which shall give the privilege of practising their "profession not only in any part of their native country, but in any "part of the world over which the British flag flies. Such a scheme "need not interfere in any way with the autonomy of the provinces. "Each may still retain its Provincial Board for the purpose of exam-"ining and issuing licenses to those candidates who are satisfied to "practise their profession in the limited sphere of their own provinces. "I think the legislators of this country will some day (and not far "distant either) be induced to see that the system which at present "obtains is unworthy of a great and growing country." J. G. A.

REPORT OF THE COMMITTEE ON INTERPROVINCIAL REGISTRATION.

The following members of the Interprovincial Registration Committee met, in accordance with instructions, during the recent meeting of the Canadian Medical Association in Quebec:—Dr. Roddick (Chairman) Drs. J. A. Williams, W. W. Dickson, James Thorburn, J. A. Mullin, H. P. Wright, J. M. Beausoleil, (Hon) D. Marcil, H. Cholette, A. R. L. Marsolais, J. S. Gauthier, R. MacNeill and W. S. Muir. Thus four provinces of the Dominion were directly represented. It might be fairly mentioned that Dr. Walker, of New Brunswick and Dr. Thornton, of Manitoba, signed the report of 1896, on behalf of their respective provinces, and would, we have every reason to believe, have likewise supported this one. British Columbia and the Northwest Territories have hitherto failed to send representatives.

At the conclusion of the second conference, Dr. Williams, of Ingersoll a member of the Ontario Medical Council, and Dr. R. MacNeill, of Stanley Bridge, Prince Edward Island, Member of the Island Medical Board, and President of the Maritime Medical Association, were appointed a sub-committee, with instructions to draft a report embodying the views of the committee. The report was, at a subsequent meeting, unanimously agreed upon and signed by all the members whose names are given above.

On Friday, August 19th, during the last business meeting of the Association, the chairman of the committee called upon Dr. McNeill to read the report which was subsequently adopted by a unanimous vote of the Association.

It will be observed that the main object of the report is to establish a uniform preliminary and professional curriculum which the various Provincial Medical Councils must exact of all teaching and licensing bodies in the Dominion, before said Councils are authorised to proceed further to the organization of the Dominion Board of Registration.

Matriculation.

1. From any recognised university, or in lieu thereof, first-class or grade A. provincial certificate in any of the provinces for teachers' licenses, or an examination of the following branches, which shall be compulsory and conducted by the various councils of the educational departments of each province, viz. :

1. English grammar, composition, literature and rhetoric.

2. Arithmetic, including vulgar and decimal fractions, and extractions of the square and cube root and mensuration.

3. Algebra to the end of quadratic equations.

4. Geometry, first three books of Euclid.

5. Latin. First two books of Virgil's Æneid or three books of Cæsar's Commentaries, translation and grammar.

6. Elementary mechanics of solids and fluids, composing the elements of statics and dynamics, hydrostatics and elementary chemistry.

7. Canadian and British history, with questions in modern geography.

8. Translation and grammer of any two of the following subjects : Greek, French and German.

9. In lieu of the above we also recommend that any student presenting a certificate after examination from the professors of any standard or approved university in Her Majesty's dominions, of having completed a course of said university, be accepted in any of the provinces of Canada for matriculation registration.

Fifty per cent. of the marks in every subject shall be required for a pass, and 75 per cent. for honors.

Professional Education.

(A) The curriculum of professional studies shall begin after the passing of the matriculation examinations and registration, and shall comprise a graded course in the regulation branches of four years sessions of not less than eight months in eachyear.

(B) The subjects to be anatomy, physiology, chemistry, materia

medica, therapeutics, practical anatomy, histology, practical chemistry, pharmacy, surgery and clinical surgery, medicine and clinical medicine, including diseases of the eye, ear, throat and nose, mental diseases, obstetrics, diseases of women and children. medical jurisprudence, toxicology, hygiene, pathology, including bacteriology.

(C) That at least twenty-four months out of the graded four years of eight months each, be required for attendance on hospital practice.

(D) That proof of attendance on not less than six cases of obstetrics and post-mortem examinations be required.

EXAMINATIONS.

A) All candidates for registration in the various provinces in addition to having filled the foregoing requirements shall be required to undergo examination before the examiners to be appointed in each of the provinces by their respective councils. Fifty per cent. shall be required for a pass and 75 per cent. for honors.

4th. Your committee recommend that as soon as the foregoing basis of agreement is ratified by the councils of the various provinces, each council shall endeavor to secure legislation to authorize the carrying out of the foregoing preliminary and professional curriculum and to embody the following to secure a board of examiners for a Dominion qualification, viz:

"That so soon as the various councils of the Dominion shall establish an examining board for the Dominion conducted by examiners appointed by the medical councils of the several provinces, their candidates passing a successful examination before said board and obtaining a certificate to that effect, shall be entitled to registration in the several provinces of the Dominion on payment of the registration fee, providing he is not guilty of infamous or disgraceful conduct in a professional respect.

"Your committee desire to recommend that further efforts be made to ascertain the practicability of federal legislation leading to the establishment of a central qualification which will also place the profession in Canada upon an equal footing with that of Great Britain, and that Dr. Roddick be authorized to take the necessary steps in said matter.

"We further recommend that this association shall appoint a committee who shall consider and recommend the details as to the number of examiners to be appointed, the method of conducting examinations, the fees to be charged, and other necessary details to bring the aforesaid scheme into active operation, which details the officers of this association shall with the foregoing send to each of the respective councils for approval."

The following were named a committee to strengthen Dr. Roddick's hands before the Government:—Dr. McNeil, Prince Edward Island; Dr. Muir, Nova Scotia; Dr. Walker, New Brunswick; Hon. Dr. Marcil, Quebec; Dr. Williams, Ontario; Dr. Thornton, Manitoba; Dr. Bain, Northwest Territories, and Dr. McKechnie, British Columbia.

GESTA MEDICORUM.

"QUICQUID AGUNT MEDICI NOSTRI FARRAGO LIBELLI."

Dr. Jas. Bell, of this city, has been elected President of the American Association of Genito-Urinary Surgeons.

In 1900, the Decennial Convention for the revision of the United States Pharmacopœia, will be held in Washington.

Prof. Wolfler has been appointed Dean of the Medical Faculty of the German University of Prague, in the room of Prof. Hans Chiari.

Dr. Wm. Pepper, Professor of Medicine in the University of Pennsylvania, Editor of the well-known "American Text-book of Medicine," is dead, aged 85 years.

Dr. T. G. Roddick, of McGill, together with Dr. William Osler, among other distinguished visitors to the British Medical Association Meeting have received the honorary degree of LL.D., from Edinburgh University.

At a meeting of the Council of the Royal Surgeons of England, held on July 14th, Sir Wm. MacCormac was re-elected to the President's chair. Mr. T. Pickering Pick and Mr. Howard Marsh were chosen vice-presidents.

The Croonian Lectures at the Royal College of Physicians of London, have been delivered this year by Dr. Sidney Martin, F.R.S. His subject was "The Chemical Products of Pathogenic Bacteria, Considered with Special Reference to Enteric Fever."

Professor Rudolph Virchow, of Berlin, Professor M. V. Cornil, of the Faculté de Médecine de Paris, and Professor William H. Welch, of Johns Hopkins University, Baltimore, were recently elected corresponding members of the Pathological Society of Philadelphia.—*Phil. Med. Jour.*

At the Montreal Meeting of the British Medical Association last year, the Earl of Aberdeen and the Rt. Hon. Lord Strathcona and Mount Royal, were proposed as honorary members of the association. At a late meeting of the Council in London, their election was formally recommended and adopted.

The opening lecture in the Faculty of Medicine of McGill Univer-

sity will be given in October, by Dr. T. Clifford Allbutt, Regius Professor of Physic in Cambridge University. The Faculty is fortunate in being able to take advantage of Dr. Allbutt's visit to this side of the water, and his address will be anticipated with great interest. Dr. Allbutt during July has been delivering the Lane Medical Lectures on Diseases of the Heart in the Cooper Medical College of San Francisco.

We notice the commendable enterprise with which the *British Medical Journal* and the *Philadelphia Medical Journal* have been exchanging notes. The former Journal has given fairly full abstracts of the most interesting papers which were read at the meeting of the American Medical Association, and the later has published *in extenso* the Presidential addresses delivered at the British Medical Association Meetings in Edinburgh, being the earliest appearance of these addresses in America.

A meeting was recently held in Toronto of the Ontario Medical Library Association. This association has been in existence a short time and now possesses over 4,000 volumes, and 27 journals are regularly on file. It is intended to lend out books to medical men desiring them, but it has not hitherto received much support from the profession at large. Recently, however, substantial donations have been received from Doctors Wm. Osler and J. E. Graham, and prospects for the future are brightening.

The Council of the British Medical Association resolved at its last meeting to found as a memorial of the late Mr. Ernest Hart a scholarship to be called "The Ernest Hart Memorial Scholarship for Preventive Medicine." It was felt that no more fitting means could be found to commemorate at once Mr. Hart's great services to the British Medical Association and to the advancement of the study of preventive medicine. The scholarship, which will be of the annual value of £200, will be tenable for two years.—*Brit. Med. Jour.*

It is satisfactory to observe that after a prolonged agitation the Medical Department of the British Army has become the Royal Army Medical Corps, the medical officers being henceforth known by titles only. Previously they were overwhelmed with a cumbrous system of double titles, and being regarded as "civilians" by the powers that be, they were naturally though undeservedly looked down upon by other purely military officers. The result was that for years the medical service has been undermanned. Now, however, the protests of the medical men have borne fruit, and by decree of Lord Lansdowne the reforms were promulgated on July 1st. This at once ends a much vexed and much debated question, and has righted what was a serious injustice to the Army Medical men.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXVII. SEPTEMBER, 1898. No. 9.

Original Communications.

PIONEERS OF MEDICINE IN THE PROVINCE OF QUEBEC.[1]

BY

W. H. DRUMMOND, M.D.

MR. PRESIDENT AND GENTLEMEN:

Meeting as we do, here in Quebec, the very cradle of our nationality, the place and the occasion is I think, peculiarly appropriate for recalling to your memory, a few of the old-time worthies of our profession: the men who were first to plant the Æsculapian banner on the soil of Canada. It is difficult to write, or say anything about the ancient city of Quebec, without picturing some of the great events which have occurred in her history, for history surrounds us on every side, from the banks of the St. Charles, where Jacques Cartier held his conference with King Donnacona and erected the sacred emblem of christianity, to the plains of Abraham where fell the gallant Wolfe and chivalrous Montcalm—but I must forbear, and pass on at once to the subject in hand.

It was indeed a motley crew that followed in the train of the French merchants, who were first attracted by visions of the fabulous wealth to be acquired in trading with the aborigines of the New World; warriors fresh from the battle fields of Europe; men of the proudest lineage of France, and who had breathed the atmosphere of courts, missionaries whose souls were fired with zeal at the alluring prospects of evangelization awaiting in the forests of America: and adventurers, daring as ever followed the standard of William of Normandy. Picture to yourselves if possible, the harbour of Port Royal, or what is now Nova Scotia, on the morning of July 27th, 1606. There is unusual bustle and excitement down by the shore

[1] Read before the Canadian Medical Association, Quebec, August, 1898.

where the little ship "Jonas," commanded by Captain Poutrincourt, is engaged in discharging her complement of passengers, mostly hailing from La Rochelle. Among the band of newly arrived immigrants there is one sturdy figure which I want you to study well, for it is the figure of Louis Hébert, the pioneer physician of Nouvelle France.

We can imagine this young fellow fresh and enthusiastic, as he strides along, gazing with curious and occasionally amused eyes, on the strange sights surrounding him on every side, and startled when addressed by some wild looking Coureur de Bois or fur-trader whose semi Indian attire, and savage bearing, seemed so inharmoniously to blend with the language of France.

From what we are told by L'Escarbot, the historian of the expedition, very little if any serious work was done at Port Royal during the succeeding fall and winter. Hunting and feasting, in which doubtless our great grandfather bore his part, were the chief occupations of the little colony, and it was only when the wine and kindred supplies became exhausted, that the associates of the "Jonas" dropped into the current setting towards Quebec, and with them drifted in the following spring, Dr. Louis Hébert.

Quebec at this time and even for some years before, had been merely a fur-trading centre, frequented by roving bands of Frenchmen, who came to barter with the Indians.

Hébert besides practisIng his profession of physician, seems also to have engaged in ordinary business enterprises, for we are told by Abbé Ferland that he "began in 1617, to grub up, and clear the ground, which forms the site of the present Catholic Cathedral and Seminary, and constructed a house and the first mill erected in the colony," thus becoming not only the premier citizen of Quebec, but also of all Canada—and here it may be well to note that the first time a notary's services were put into requisition in Canada, was at the instance of the heirs of Hébert the physician—thus proving that in this country, the profession of medicine ante-dated that of law.

Contemporary with Hébert was the surgeon Bonnerme, who came with Samuel de Champlain, when the latter founded Quebec, in 1606. Evidently all was not peace in the camp of Champlain, for shortly after his arrival, some of his followers hatched a murderous plot against the life of the great navigator, the scheme, however, leaked out, the ring-leader was arrested, found guilty, and executed. In some way or other, Bonnerme became mixed up in the matter, and suffered imprisonment, but subsequently his innocence being proved, he was honorably acquitted, our profession thereby fortunately avoiding the distinction, of contributing to the first judicial hanging held

in Canada. Dr. Bonnerme's existence in the colony was a comparatively short one, for he died of scurvy, the universal scourge, in less than two years later.

It is difficult to give the exact year in which the well-known Dr. Robert Giffard settled at Quebec, but we do know that 1634 saw the historic Seigniory of Beauport founded by Giffard, who in becoming the first settler in rural Canada, also became the first Canadian *habitant*. At Beauport he lived to a frosty old age, and many of the leading families of French-speaking Canada proudly recall their descent from Robert Giffard the physician, and first of Canadian Seigneurs.

1639 witnessed at Quebec, the foundation of the Hotel Dieu, under the management of the Sœurs Hospitalières from the convent of St. Augustin in Dieppe, and which was the gift of the Duchess D'Aiguillon, niece of Cardinal Richelieu, and in 1642, a similar building was erected at Ville Marie, the Montreal of the present day, this latter institution being largely due to the benefaction of Mde. de Bouillon, the rich widow of a superintendent of finance. The primary objects of these excellent charities, was the teaching of the children and nursing of the sick, and the faithful manner in which the original intentions have been carried out, even to the present day, entitle the good sisters, to a place among the medical pioneers of this province. In 1690, when Phipps knocked in vain at the gates of the ancient city, the population under the vigorous administration of Frontenac, had increased to 1500, and education had made considerable advance. The Jesuit's College, Séminaire des Missions Etrangères, and Petit Séminaire, were on a firm footing, and we find practising, at Quebec, Drs. Gervase Beaudoin, physician to the Ursuline nuns, Timothé Roussel, physician to the Hotel Dieu, Nicholas Sarrasin, Jean Leger de la Grange, Armand'Dumanin, and Pierre du Roy. Of the number Sarrasin was perhaps the most noted. Born in France in 1659, he emigrated to Canada shortly after completing his medical course, and died at Quebec in 1736. He was physician to the King, a member of the Sovereign Council, and published during his long life time, a number of volumes of natural history, botany and medicine, besides discovering the pitcher-plant, which perpetuates his memory in the name of "Sarracenia purpurea."

When Peter Kalm, the Swedish Botanist visited Canada in 1749, seven years after the discovery of the Rocky Mountains by La Verendrye a native Canadian, his constant companion during many a woodland ramble, was Dr. Gaulthier, himself an accomplished botanist, and from Dr. Gaulthier, Kalm acquired most of the informa-

tion which appeared some years later, in the shape of two large volumes illustrated with plates.

A well-known surgeon who figured during the historic period before and following the conquest of Canada by the British in 1759, was the famous Phillippe Badelard—Badelard was present at the battle of Abraham, and seeing that the French troops to which he was attached were giving way, directed his steps to the rear where he met a wounded Highlander named Fraser, who was bleeding profusely. The doctor immediately attended to the soldier's injuries and then gave himself up to Fraser as a prisoner of war. Both Dr. Badelard and John Fraser lived to a very advanced age, and ever maintained for each other the closest ties of kindly friendship. Dr. Badelard was a person of most gentlemanly presence, and constantly wore a sword as was customary with the Bourgeoisie de Paris.

A contemporary of Badelard, Dr. Arnoux, lived for many years in Quebec, and it was in Arnoux's surgery that Montcalm's wounds were dressed while the great soldier was being borne through St. Louis Gate.

Another well-known surgeon of this period, Dr. Lejuste of the French army, came to Quebec after the fall of Louisbourg in 1758, and later among the noted medical men of the province, we find Dr. Francois Blanchet, the father of the first Education bill in Lower Canada.

The cause of education had also in Dr. Jean Baptiste Meilleur, an able and successful advocate. Meilleur who was born in 1796, and died in 1830, had the honor of being the first Superintendent of Public Instruction for Lower Canada, and during his life time, contributed many articles to *Le Journal de Médecine.* He was also a voluminous writer on geology, botany, agriculture, and other scientific subjects, and took a prominent part in the foundation of L'Assumption College.

Dr. Jacques Labrie, born in 1783, and who graduated at Edinburgh, sat for several years in the Lower Canadian Assembly, and besides doing good work as a medical man, also wrote a "History of Canada" which while awaiting purchase by the Government, was unfortunately destroyed by fire at St. Benoit during the rebellion of 1837.

The mention of 1837 will recall to the minds of every student of Canadian history, the names of at least three members of our profession, who were prominent among the agitators of that stormy period, namely Nelson, O'Callaghan and Chenier. Wolfred Nelson although an English-speaking Protestant, warmly espoused what was then termed the national cause, and led the insurgents at the battle of St. Denis, where the British forces were obliged to retreat. Twice he

was elected to the Presidency of the Provincial College of Physicians and Surgeons, and he also sat in the Lower Canadian Assembly. He constantly contributed to the medical press articles on preservation of public hygiene, "Reports on Penitentiary Prisons," etc., and although he suffered for a while political banishment, yet the fact that on his return to Canada, he was elected to the Mayorality of Montreal, is a proof of the esteem in which he was held by the people of that city.

Dr. Edmund O'Callaghan, a brilliant Irishman, was a member of Parliament, editor of the *Montreal Vindicator*, and author of several historical works. He also was an active participant in the troubles of 1837, after which he took up his abode in the United States, and the gallant Chenier immortalised himself by dying a soldier's death at the battle of St. Eustache.

A man who followed the more peaceful paths of life, was Dr. Andrew Fernando Holmes, born at Cadiz, in 1797. Dr. Holmes who was one of the foremost medical men of his time, collected while a student in Scotland, an extensive herbarium of plants, which later on he presented to McGill University. He was a recognized authority on botany, geology and mineralogy, and contributed many articles on these subjects, as well as writing the history of cholera in Montreal. In 1827 he established with others, The Medical Institution which finally in 1828, merged into that of McGill, of which Dr. Holmes was the Dean, and where he lectured on the Practice of Medicine till the time of his death.

One of the most illustrious names in Canadian medicine, is that of Sir George Duncan Gibb who was born at Montreal in 1821. Sir George founded the St. Lawrence School of Medicine where he held the chair of Institutes of Medicine and Comparative Anatomy, and to which he attracted by his marvellous powers as a lecturer and demonstrator, students from all parts of the country. He assisted in the founding of the Montreal Dispensary, delivered lectures each winter before the Natural History Society, Mercantile Library Association, and Addisonian Literary Society, was Curator and Librarian of the Natural History Society for four years, and devoted much time and attention to the arrangement of the Society's collection, presenting to that body before he left for England, the greater portion of his private museum numbering nearly 1500 specimens in Natural History, and miscellaneous objects of interest and curiosity. A review of Sir George Gibb's contributions to the medical press alone, would form a volume by itself, suffice it to say that during his ten years editorial connection with the *Lancet*, he supplied at least six columns of hospi-

tal matter each week, which is equivalent to 3120 columns for the 520 weeks, or ten volumes of the Journal of 760 pages each. Sir George Gibb might not incorrectly be termed a specialist in any branch of medicine, for there was no department of the science which he did not seem to have thoroughly mastered.

Dr. Archibald Hall, born at Montreal in 1812, and educated at Edinburgh, besides lecturing at McGill successively on materia medica, chemistry and obstetrics, was much devoted to botany, zoology and meteorology. Zoology, however, was his chief delight, as in 1839, we find him presented with the silver medal of the Natural History Society "as a prize for the best essay on the zoology of the district of Montreal."

As a medical writer, Dr. Hall is best known as the editor of the *British American Journal of Medical and Physical Science*, which he established in 1845, and conducted with great ability until its suspension in 1852, and again from 1860 until it finally expired two years later.

Long before "Old Probabilities" were heard of in the United States, Dr. Robert Smallwood, born in 1812, had established at St. Martin, some ten miles from Montreal, a "Meteorological and Electrical Observatory" which was a constant source of wonder to the good people of the parish. Daily from his temple of mystery, Dr. Smallwood telegraphed to Montreal the weather estimates for the ensuing 24 hours and many an anxious St. Martin farmer was stimulated to fresher exertions by the Doctor's prognostications of a rainstorm soon to come, or *vice versa*.

Dr. Smallwood performed some invaluable work, and contributed to the press many interesting articles on the subjects mentioned.

The first medical serial which appeared in Canada namely, *Le Journal de Médécine de Quebec* was published in 1823, by Dr. Francois Xavier Tessier, who was also founder of the Quebec Medical Society.

Dr. Tessier who acquired a wonderful knowledge of several modern languages, studied under Dr. Von Iffland of Quebec, and graduated at New York. *Le Journal de Médicine* which was published in both English and French, received for a while the support of some of the best writers of the province, but finally owing to lack of support of paying subscribers, succumbed to the inevitable, and died the usual death of such journals, three years later.

Dr. Von Iffland founded in 1820, the first anatomical school established in Quebec. He held during his life-time various important positions in connection with his profession under the crown, was for some time Medical Superintendent of Quarantine at Grosse Isle,

wrote a history of the town of Sorel, and also contributed a large number of articles and essays for the medical and general press both in Europe and America.

A public spirited man and good citizen, was Dr. Joseph Morrin born in Scotland in the early part of this century, and who founded the college bearing his name, which school has been of incalculable benefit, especially to the English-speaking youth of Quebec. Dr. Morrin delivered the inaugural address at the opening of the Quebec School of Medicine, replete with much statistical information concerning the same. Before the incorporation of the old Quebec Medical School with Laval University, Dr. William Marsden, born in 1807, lectured on anatomy, physiology, surgery, materia medica and botany. He was also for a time President of the Provincial College of Physicians and Surgeons and from 1851 to 1854 a member of the *Quebec Mercury* editorial staff.

It was not until the end of the last century, that English-speaking colonies began to spring up in the rural parts of this province, and these colonies were perhaps most numerous in the districts situate on the southern shore of the St. Lawrence and known as the Eastern Townships. The earlier settlers were largely of New England origin coming for the most part from New Hampshire and Vermont, and among the granite hills and green mountains of their native states, these hardy pioneers had had a training which enabled them successfully to cope with the rugged forces of nature in their new homes. The life of the country practitioner to-day in the Province of Quebec, as many of you know, is a trying and arduous one, but it is an elysium compared to that experienced by our brethern of a century or even fifty years ago, when often the man of medicine, mounted on horseback, had to find his way to a distant patient, without even a blazed tree to mark his path through the forest. Such was the state of the old township of Shipton, when in 1803 Dr. Abraham Perkins Silver settled within its borders. Born in the city of Boston in 1770, Dr. Silver graduated at Harvard in 1795, and eight years later established himself in Shipton, where he practised for over half a century. During most of this period he was the only physician between Sherbrooke and Drummondville, and to-day you will still hear in these localities many a tale of the blunt, but large hearted, Dr. Silver.

The first medical man who made Richmond his home, was William Hollingworth Fowler, an Englishman born in 1808. He graduated at Glasgow, was for some time in the Royal Navy, in which capacity he visited nearly every portion of the globe, and finally settled down at Richmond in 1842. A man of great natural capacity and varied

gifts, he contributed in prose and verse to the journals of the time, and his active habits only terminated with his death in 1860.

Another land-mark of medicine in the Richmond district was Richard Norris Webber. Dr. Webber while at Harvard, witnessed the first operation performed under ether, and a thesis on "Ether as an Anæsthetic" written during 1847, his graduating year at Harvard, gained for Dr. Webber considerable reputation. Shortly afterward he established himself at Richmond, where for the fifty remaining years of his life, he was a constant and busy worker. St. Francis College numbers him among its list of founders, and an honored name remained behind when Dr. Webber passed away in 1897.

The township of Durham welcomed in 1849, the advent of a man who for nearly fifty years ministered faithfully to its medical wants—Dr. White, born in England in 1811, graduated in Edinburgh 21 years later, and then took a subsequent course at Trinity College, Dublin, after which he went to Australia, remaining in that colony for five years, returning to London, he spent two years in the metropolis, and finally emigrated to Canada, settling down in Durham in 1849.

Dr. White who was in every sense a cultured gentleman of the old school, had the distinction of being the first, and for many years the only physician in the county of Drummond, consequently his work extended over a very large area.

Among the hills of Missiquoi, Shefford and Brome, the names of Chamberlin, Brigham, White, Stowe, Shannon, Searles, Cotton, Butler, Patten, Frary, Foster, and Abbott, are still held in grateful remembrance by the descendants of the pioneers who first settled these districts early in the present century. Among the most noted members of this group were perhaps Drs. Chamberlin, Cotton and Butler.

Joshua Chamberlin was born in Vermont in 1799, an able surgeon, a man of great resource and forceful character, the 56 years of his professional life were almost entirely spent in the vicinity of Frelighsburg.

Dr. Charles E. Cotton, a native of the township of Durham, where he was born in 1816, graduated at Jefferson College in 1837, and practiced nearly the whole of his medical life time at Cowansville. Dr. Cotton was a remarkably skilful surgeon and was once heard to remark after reading the account of a successful ovariotomy "If I had only known forty years ago, that the peritoneal cavity could be safely entered, I too might have had successful ovariotomies." Although frequently tempted to present himself for political honors, Dr Cotton always remained loyal to his chosen profession, and

literally "died in harness" after 50 years unwearying combat with disease.

The settlements along the north shore of the Ottawa, have had since their inception, many men of whom the profession may well be proud, and the Churches, Robertsons and Christies, who were among the early medical pioneers of these districts, are still perpetuated in medicine by descendants bearing the same honoured names.

I hope at some future day to go more deeply into the history of our medical forefathers, but for the present, space is too limited to permit of further extension. My purpose for the moment has been fulfilled, if I have only stimulated to a slight degree, your interest in a subject which it seems to me should command our admiration and respect, for not only is it due to the noble dead of our profession, but also due to ourselves, that we should occasionally become retrospective and look back to the heroic men who in our own country, led the van in warfare against the King of Terrors "Lest we forget, lest we forget."

ADDRESS IN MEDICINE.[1]

BY

THOMAS RICHARD FRASER, M.D., F.R.C.P., EDIN., LL.D., ABERD., F.R.S.,

Professor of Materia Medica and Clinical Medicine, University of Edinburgh.

THE TOXIC ORIGIN OF DISEASE.

When this Association last met in Edinburgh the Address in Medicine was delivered by the accomplished and universally beloved physician, Dr. Warburton Begbie, and notwithstanding the lapse of time, I can still recall—and there are others here also able to recall—the thesis which formed the subject of the address, expressed in the inquiry, Has the practice of medicine made a single step since the time of Hippocrates?

In dealing with this thesis, Dr. Begbie described the history of medicine from its beginnings, as only could be done by one who had not only carefully studied the writings of the Fathers of medicine, but had also made himself familiar with the work of their successors. The doctrines regarding the nature of disease, which successively replaced each other during the twenty-three centuries dealt with, were clearly described, and, as was to be expected from the practical physician, he fully discussed the bearings of these doctrines upon treatment, and pointed to the more conspicuous acquisition in the healing art which had enriched practical medicine.

He had the opportunity of showing how greatly medical doctrine had been transformed by Harvey's discovery of the circulation of the blood; how the diagnosis of pulmonary and cardiac disease had received an extension and previously unknown definition from Laennec's discovery of auscultation: how the memorable discoveries and courageous applications of nitrous oxide, and chloroform, by Horace Wells, Morton and Simpson, had deprived the knife of the surgeon and the reproduction of animal life of much of their former terrors and anxieties; and how by that vaccination, which will ever be associated with the name of Jenner—the first and still unsurpassed means of restricting the ravages of a fatal infectious disease—an almost incalculable benefit had been conferred upon the human race.

From his elaborate survey of the history of medicine, he concluded that no general doctrine—chemical, physical, humoral or physiological—had been propounded which satisfactorily explained the nature and

[1] Reprint from the British Medical Journal, July 30th, 1898.

production of disease; that therapeutic advancement had been obtained, chiefly by the observation of patients, by adhesion to the classic method of rational empiricism; and that by this method such valuable accessions to the means of treating disease had been gained as the administration of turpentine in pulmonary gangrene and bronchitic affections; of quinine in intermittent fever; of iodide of potassium in syphilitic periostitis and thoracic aneurysm; of bromide of potassium in epilepsy; and of cod-liver oil in pulmonary tubercle.

It may not be without interest to consider to-day how far, and in what directions, this great and wide subject of medicine has chiefly advanced since Dr. Begbie delivered his address. The intervening period is the relatively brief one of scarcely a quarter of a century. It has, however, been signalised by a great increase of knowledge regarding the fundamental sciences of chemistry, physiology, and morbid anatomy; by the creation of pharmacology as a science of the action of remedies; by steady advance in symptomatology and diagnosis, and above all by so remarkable a development in our conceptions of the nature and production of many diseases, that we appear almost to have attained a position, vainly sought for during centuries by our predecessors, of being able to formulate a doctrine of disease, founded upon the satisfactory basis of experimental demonstration, and sufficient to explain many of its forms and to already provide us with assured means and principles for its prevention and treatment.

While fully acknowledging the merits of the workers in medical science and practice by whom this gratifying progress has been made, it cannot be forgotten that the necessary pioneer work was undertaken amid difficulties of exploration in dark and unknown regions; and that but for this pioneer work the present generation would not have been able to reap so prolific a harvest of medical discovery.

This indebtedness to our predecessors is nowhere more conspicuously shown than in the advancements that have been made in the diagnosis of disease. Observation, careful and intelligent practised by the Fathers of medicine, had already constructed a nosology sufficient to distinguish the great majority of diseases, and so complete that it is doubtful if much advance could have been made had the methods in use at the commencement of this quarter of a century alone been trusted to. The introduction, however, of physical aids to our senses, and of chemical applications and methods—each rendered possible by the growth of collateral science—has placed us in a position from which we have been able to advance in accuracy of diagnosis, and even in the discovery of new diseases.

By the apparatus now in use for blood determinations the condition

of this fluid in regard to many of its most important constituents can be exactly determined, and information can be obtained valuable for treatment, and previously unattainable by any perfection of intelligent observation by means of the unaided senses. The sphygmograph depicts with precision of detail changes in the pulse which are difficult to apprehend by the unaided finger, even after a long apprenticeship, and above all increases the usefulness of the physician by indicating the characters which, without its use, he should be trained to detect. He is thus enabled to appreciate changes, which are not only of the highest value in prognosis, but are also frequently sufficient, either in themselves unaided by the most superficial of further observation, to justify without auscultation the diagnosis of the cardiac lesion which is present. The ophthalmoscope has increased the certainty of diagnosis of many nervous affections and toxic processes, and some of the difficulties of clinical observation have been overcome by radiography whose capabilities, however, are as yet undeveloped,

By the introduction of chemical processes applied especially to the examination of the stomach contents, and of the urinary and other secretions, diagnosis has also been advanced, and previously unknown precision has been obtained. The agglutinating effects of the blood-serum in certain infective diseases as typhoid, Malta and relapsing fevers, and in cholera and anthrax, upon their respective pathogenic organisms ; and the application of chemical pigments to reveal the existence of the microscopically minute organisms of such diseases as pulmonary tubercle, pneumonia, and diphtheria has removed many of the perplexities of diagnosis and rendered identification almost a mechanical art.

While by these and other means the diagnosis of disease—a fundamental work in the art of medicine—has conspicuously advanced during the last quarter of a century, this advancement, however great, does not in itself justify any claim to a nearer approach to the realisation of the highest aims and objects of medicine. Diagnosis, for the most part, deals only with symptoms, it has no immediate concern with the true nature of the malady, and until this has been determined progress in treatment can only be tardy and unsatisfactory. The history of medicine has shown that the advance in these two departments has rarely, if ever, been parallel or equal. The one may reach a position of almost ideal perfection, while the other still remains in the initial stage of vague speculation. This is exemplified by the present state of knowledge of nervous diseases. Minute symptoms have been identified, and have been so arranged in groups as to constitute special diseases, and thus numerous forms of disease associated

with morbid lesions of parts of the spinal cord or brain have been created. The elaboration is a remarkable triumph of painstaking and skillful observation in symptomatology and in morbid anatomy. It presents a field for the training of the powers of observation and reason, probably unsurpassed by any other problems in practical medicine, and the solution of these problems is undoubtedly a cause of satisfaction to the physician, as it frequently also is to the patient. To what extent, however, is the patient a gainer? To what extent is the object of diagnosis and of all medical knowledge fulfilled? It must be admitted that the gain in most cases is disappointing. The natural course of the disease is no doubt often beneficially modified, but usually to only a slight extent, unless surgical treatment be successfully applied, which even the scientific discoveries of Ferrier and Horsley and the surgical skill of Durante, Kocher, Macewan, and others have rendered possible in relatively few cases. Whether the investigation of the condition of the patient leads to the diagnosis of acute ascending paralysis, or anterior cornual degeneration, of spastic paraplegia or locomotor ataxia, of syringomyelia or bulbar paralysis, the methods of treatment are much the same; and while we may have some satisfaction in adopting measures to relieve symptoms or to protect the patient against conditions favourable to the progress of the disease, or to increase the general powers of resistance, we most frequently find ourselves in the mortifying position of being unable to cure the disease. In those cases, on the other hand, where it is possible to advance from diagnosis to the determination of the actual cause of the disease, when remedies are employed which have been proved to be curative as regards that cause, the disease, whatever be its position in the artificial nosology of nerve affections, may in many instances be arrested in its progress, and may even be cured, provided the affected tissues have not already undergone incurable destruction.

At the present epoch in medicine it is especially interesting to recognise that the latter gratifying results are to be obtained when there is reason to believe that the disease has been caused by a toxic substance present in the body, and that according as this substance is the poison of syphilis, or of rheumatism, or of malaria, is the cure effected by remedies which have been proved capable of annulling the toxic effects of these poisons. It is thereby shown that the disease is not truly a product of the structural alterations which are present, but of a hurtful substance or poison capable among other effects of producing these structural alterations. Similar facts are observed with many ordinary poisons, and an association, highly significant in regard to the production of disease, is thus indicated. Many of the

more common poisons also produce changes in structure closely simulating the changes of disease, as the peripheral neuritis, anterior cornual degeneration, granulo-fatty degenerations, and arterial sclerosis of lead: the liver steatosis and yellow atrophy of phosphorus: and the fatty degenerations and diffuse sclerotic hyperplasia of the liver, the peripheral neuritis and the atheromatous changes in blood vessels produced by alcohol.

By such facts, acquisitions of modern pathology, it is strongly suggested that the structural changes found in many diseases may, after all, be mere manifestations, associated with other effects, of a cause which would thus assume the importance of being the essence, the *vera causa*, of the disease, and that this essence is a toxic substance. This idea is rapidly becoming the predominant doctrine of the present-day conception of disease, and as investigation proceeds it is almost daily receiving support from new facts. It has been demonstrated that the body is constantly subjected to the risks of poisons produced within itself, as well as of poisons introduced into it from without. Many of the poisons produced in the body, such as the ptomaines and leucomaines, are of the chemical nature of the previously known alkaloids, and not a few of them rival the vegetable alkaloids in toxic power and reproduce their leading effects. Nervine for instance, is lethal in minute doses, and acts in many respects like pilocarpin; while muscarin finds its anologue in the active principle elaborated by poisonous fungi.

The organism, even in a state of health, is a veritable storehouse of these toxic substances. Many of its normal constituents, such as potash salts and carbonic acid, are well recognised poisons; many of the products of its glands, such as saliva and bile, contain toxic ingredients: many of the substances formed in the processes of disassimilation, and which enter such secretions as the urine and the intestinal canal, are capable of disordering health and even of endangering life: and in disorders of function, even if they amount to little more than mere disturbance of nutrition, poisons not found in the healthy body are generated and produce the symptoms of disease. By such toxic influences the symptoms of cholæmia, gout, rheumatism, uræmia, diabetic coma, stercoræmia, and probably also of chorea, sunstroke, neurasthenia, asthma and the idiopathic anæmias receive a sufficient explanation, even although the toxic substances have not in all cases been identified.

The doctrine of the toxic origin of disease has also been applied to mental affections. Auto-intoxication from poisons produced in the intestinal canal is believed to be an important factor in the causation

of insanity, and already neurologists, such as Nissil and Van Giesen, have expressed the opinion that the toxæmic theory is destined to clear away much of the present vagueness regarding the pathogenesis of mental disease. Further, it is not improbable that in cancer, auto-intoxication by a poison generated in the cancer cells, equally with, and in some instances to a greater extent than, structural degenerations of invaded tissues, accounts for the symptoms and for the fatal termination—a probability which has been strengthened by the separation from cancer of a substance possessing a hyperthermic and powerful lethal action.

The widely acting pathogenic influence of poisonous substances has, however, received its most definite and convincing support from the remarkable discoveries in bacteriology which have signalised this period. The gravity and wide prevalence of infective diseases had rendered them a subject of special study from the earliest period. Rhazes in the seventeenth century propounded the view that the small-pox was essentially a fermentative disease, and thus originated the doctrine of the fermentative nature of all infectious disease. Previously to this time a theory of the parasitic origin of these diseases had been propounded, and its more enthusiastic supporters gave a reality to their views by such statements as that syphilis was caused by a minute worm, and measles, smallpox and plague by infusorial animals or invisibly minute insects. With the introduction of the compound microscope the parasitic theory disappeared in this gross form of it, and the fermentative theory was again adopted. It was not, however, until 1861, when Pasteur's great discovery of the nature of butyric fermentation was made public, that the sufficiency of the theory became revealed. His demonstration of the essential part played by minute living structures in the transformations which constitute the process of fermentation at length removed the process from the mysteries which had previously surrounded it, and opened up applications to the pathogenesis of infective diseases which have revolutionised medicine. He pointed out that the organisms of fermentation are similar to those which had already been discovered by Rayer and Davaine in anthrax. He subsequently demonstrated the virulent nature of the microbes of pyæmia and infected gangrene, and following Kock's work on the cultivation outside of the body of the bacillus of anthrax, he proved also that this bacillus, as well as that of fowl cholera, is able, when grown in suitable media, to reproduce itself almost indefinitely and to retain for many generations its power to cause the symptoms of the original disease when inoculated into animals.

The way was thus opened up for important additions to the knowledge of the etiology of infective diseases, and in rapid succession, the pathogenic micro-organisms of swine fever, glanders, tubercle, Asiatic cholera, septicæmia, erysipelas, pneumonia, and numerous other infective diseases were discovered.

The pathogenic action of the microbes was at first attributed either to mechanical obstruction of the blood vessels, caused by their accumulation in them, which resulted in asphyxia of organs essential to life ; or to a biological action which enabled them to appropriate nutritive materials destined for the tissues of the body, and thus to deprive these tissues of life. While in the case of a few of them, both of these actions may to a slight extent explain their effects, it was subsequently proved that these effects are mainly caused by the poisons which they produce. The poisons are of complex composition ; some are alkaloids, and others modified proteids, and others, again, have altogether unknown chemical composition. Many of them are of extreme and almost indefinitely great activity ; one milligramme, for instance, of the dry poisonous constituents of tetanus toxin is sufficient to kill a horse, or 600 million times its weight of living tissue ; while the hyperthermal effects of tubercle toxin are appreciable when the dry toxin in doses of from one to two-tenths of a milligramme, is injected, representing a strong reaction on 60 trillions of its weight of living human subtance. Like other poisons, further, they are capable of producing structural changes, exemplified in the skin eruptions produced by many infectious diseases ; the local necrosis of peripheral nerves produced by the diphtheria poison ; the fatty changes and longitudinal fibrillation of the heart muscle produced by this poison, and also by that of anthrax ; the cerebro-spinal meningitis produced by the poison of influenza ; the anterior cornual and muscle degenerations and the neuritis produced by the poisons of tetanus and diphtheria ; the acute parenchymatous and hæmorrhagic nephritis produced by serpents' venom ; and in the production of nodules in the lungs, reproducing the characteristics of pulmonary tuberculosis, by dead tubercle bacilli.

The demonstration of the toxic origin of infectious diseases has thus added greatly to the number of diseases which are caused by poisons, and has thereby been largely instrumental in establishing the doctrine of the toxic origin of disease. Unlike the older doctrines of the iatrochemists, humoralists, and physiologists, this doctrine is supported by an abundance of convincing facts ; and it may confidently be anticipated that it will have an endurance which former systems of medicine have not possessed.

Large numbers of disease-producing poisons are thus ever present in the body, created by the normal processes of life, and abundantly produced by departures, even in themselves unimportant, from these processes. Many substances well known to have poisonous properties are intentionally introduced into the body, such as alcohol, tobacco, tea and opium, while others, such as lead, accidentally find their way into it. The respiratory passages and intestinal canal are crowded with micro-organisms, and they teem in the soil, air and articles of food. Many of them are producers of virulent poisons, and when they effect a lodgment in the body and find conditions congenial to development, they proliferate with so great rapidity that a single bacterium may in twenty-four hours have multiplied itself into many millions of separate toxin-creating organisms,

In these circumstances, it is of interest to inquire what defence man and other animals can oppose to the disease and death-producing poisons by which they are so constantly endangered? Instances have long been known of the possession of defensive powers against the ordinary poisons, organic or inorganic. Certain animals are by hereditary endowment able to receive with impunity large quantities of poison, which in minute quantities are hurtful to other animals well exemplified in the enormous quantities of belladonna and opium which may be administered without injury to herbivora It is also notorious that man and other animals may become so habituated to the action of several toxic substances that in the course of time, doses greatly in excess of the minimum lethal are no longer able to cause death or even much inconvenience. Such acquired powers of defence are produced against arsenic, opium, alcohol, and tobacco, and they are also illustrated in the effects of nitrite-ethers.

Explanations for these exceptional powers of defence have been found in the special activity of the processes of elimination, and particularly of elimination by the kidneys, whereby the quantity of poison requisite to cause injury is prevented from being present in the blood; in an unusual power of producing decomposition, probably dependent on special chemical conditions of the blood, by which, for example, herbivorous animals are enabled to convert very large quantities of atropine into relatively inert tropine substances; and on the property which certain organs, and especially the liver, possess of absorbing and retaining toxic substances and of thus preventing their access to the structures on which they act in quantity sufficient to be hurtful. In the case, further, of many organic poisons, absorption and diffusion are impeded by the walls of cells, as in the instance of the slow absorption of strychnine through the

stomach walls and of many albuminoid poisons through the intestinal epidermis.

These explanations, however, do not account for all the observed phenomena, and it must in the meantime be assumed that tissues may gradually become accustomed, possibly by exhaustion, to the pertubations produced by substances which modify their normal condition, so that by-and-by a tolerance is induced.

Anticipating some statements which will afterwards be made, a fundamental difference exists between both congenital and acquired defence against ordinary poisons and that resulting from the action of disease toxins, venoms, and such-like poisons, in so far that in the former there is not produced in the blood any substance which plays the part of an efficient counter-poison or antitoxin.

The subject has, however, gained a new importance from the remarkable facts discovered in connection with the poisons generated by pathogenic micro-organisms, and in connection also with other poisons of very similar chemical composition, represented especially by the venom of serpents and by the vegetable products abrin and ricin.

It had long been known that many infectious diseases conferred upon those who had suffered from them a power of resistance against subsequent attacks of the same disease. After the discovery had been made—and to this I have already alluded—of the microbian origin of infective diseases, it was experimentally shown that if the microbes constituting the cause of any infective disease were inoculated into animals, not only were symptoms of the disease produced, but also that the animal, if it survived, reproduced still further the events of an infectious illness, by acquiring a power of successfully resisting the morbific influence of the same microbes subsequently inoculated. It has likewise been found that each of these events could be reproduced by the filtered, and therefore microbe-free, solution, in which the pathogenic microbes had been cultivated, and thus it was demonstrated that neither the original disease nor the subsequently acquired production was actually due to the microbe, but to toxic substances produced by it.

From this position the further great advance was made that the blood serum of protected animals, itself destitute of poisonous properties, when introduced into non-protected animals conferred upon them a resisting power which might be so great that even large lethal doses of the virulent micro-organism and of its toxin no longer produced death or even symptoms of poisoning.

These remarkable results of experiments deservedly claim much attention. They irrefutably demonstrate that infectious diseases are

in their essence poisonings: they throw much light on the mystery, previously shrouded in metaphysical phrases, of the nature of the protection acquired by attacks of infectious disease or conferred by vaccination: and they have not only at once led to valuable therapeutic results, but they indicate further applications, both in the prevention and treatment of disease, exceeding in their possibilities any expectations that had previously been originated by discovery in medical science.

Inquiry into the nature and cause of this protection has thereby been removed from the position of speculation long occupied by it to one in which experimental methods could be pursued with some hope of solving the problems. Many of the results, however, are yet difficult to explain, and considering that new facts bearing upon them are almost daily being obtained, it is not to be expected that altogether satisfactory solutions had been found or unanimity of opinion obtained. More especially does this apply to the nature of the process whereby protection or immunisation is obtained, to the origin of the protection-producing substances or antitoxins, and to the manner in which they act as curative or therapeutic agents.

As in the case of some of the ordinary poisons, mineral and vegetable, it may be admitted that a portion of the acquired protection is due to the tolerance brought about by the accustoming of the structures of the body to the action of the poison, but this tolerance could not continue for the long periods during which acquired immunity sometimes persists after the infected disease has been recovered from. It may also be admitted that pathogenic micro-organisms absorb and thus remove from the body certain constituents necessary for their growth and vitality, whose removal may, to some slight extent, render the body unsuited for the further growth of these organisms; but, apart from other objections that might be advanced, it is inconceivable that this cause could operate in the bodies of animals which so rapidly change the composition of all their constituent parts, and that therefore the substances which have been removed would not very soon be again restored to the body, and thus render it vulnerable to fresh infections. The doctrine of phagocytosis, enunciated and ably and strenuously supported by Metchnikoff, in which protection is attributed to the power possessed by leucocytes of absorbing and destroying microbes, may to a limiting extent account for the destruction of living microbes, but it probably accounts to a greater extent for their disappearance after life is extinct: while it can have but little influence upon the soluble toxins which, since the introduction of the theory of phagocytosis, have been proved to be in most cases the true cause of the disease symptoms.

The frequent persistency of immunity, not only exemplified in the after-history of patients who have recovered from certain of the infectious diseases, but also in vaccination against small-pox, as it alone serves to disprove each explanation yet advanced of the essential nature of acquired protection, must be taken into account in formulating explanations. The micro-organism of an infected disease introduced into the body produces the characteristic symptoms of the disease, and, if the animal recover, subsequent inoculations of this micro-organism no longer produce any injury. The animal has become protected against the disease, and there is abundant clinical evidence to show that in the case of the majority of infectious diseases the immunity lasts for many years. The pathogenic organism of the same disease cultivated outside the body produces a toxin which when administered to an animal likewise reproduces the symptoms of the disease, and if the animal recover, and further quantities of the toxin are successfully administered, an immunity may be acquired so great that the animal suffers but little inconvenience when 50 times the minimum-lethal dose, or even a larger quantity, of this toxin is now administered to it. The immunity acquired in the latter case is, however, only of short duration. I do not know if the duration of it has been defined with any of the toxins of disease, except with the toxin of diphtheria, and Roux and Klein have shown that with this toxin it lasts only from five to seven days. Enough, at least, has been done to show that it is brief when compared with the immunity produced by the microbes from which the toxins had originated, and Klein remarks that a serum which may be relied on to afford any durable protection is still a desideratum. It is also interesting to note that Monckton Copeman has found that lymph filtered so as to remove from it all solid particles, and therefore presumably all micro-organisms, can produce only a briefly lasting protection against unfiltered vaccine lymph of normal potency. In the case of the venoms of serpents—which in composition, and in other important respects, are analogous to the toxins of disease—the duration of immunity has, however, been defined; and experiments have shown that if an animal be protected so as to survive the minimum-lethal dose of the cobra venom, the protection produced against the same dose of venom does not last longer than a few hours; and even when the process of the immunisation has been carried so far that the animal can survive four times the minimum lethal, the protection against this dose of venom exists for only thirty days.

The protecting substance, antitoxin or antivenin, which appears in the blood after inoculation with pathogenic microbes, or after the

injection of toxins or venoms, is chemically unstable, and is subject also to the general processes of elimination. Its presence in the body, even when the quantity of toxic substance to which it owes its origin is greatly above the quantity of toxin which has been elaborated in a case of infectious disease by the pathogenic organisms of that disease, is to be measured by days only: and, nevertheless, the protection produced in a patient by an infectious disease may apparently endure for a lifetime, and the immunity from small-pox gained by vaccination for at least seven years. It appears to me impossible to explain these contrasting facts on any other supposition than that, in the instances of prolonged immunity, successive supplies of the antitoxin of the disease, or of small-pox, must be furnished to the body during the time that protection continues. It is not possible, however, that these supplies could emanate from the pathogenic organism itself, for the life of the host would not endure were it retained in the body in its condition of original virulence. Jenner himself believed that vaccinia is a modified small-pox. The microbe of small-pox, like all other microbes, is greatly influenced by its surroundings. When transferred from man to the calf, it is now known that it may gradually acquire the characteristics of vaccinia, and elaborate substances which reproduce in man the protective effects of inoculation with human vaccine The microbe of small-pox, therefore, has obviously become so modified that, while it can no longer produce a virulent toxin, it still retains the power of elaborating a protective antitoxin, and also retains sufficient vitality to reproduce its like through many generations in the human body.

Evidence pointing in the same direction has been obtained with other pathogenic microbes. Pasteur found that the microbes of fowl cholera, when treated in a certain manner, can have its virulence greatly lessened, and if it be then injected into the tissues of fowls, only slight poisoning is produced. From fowls thus treated, microbes are obtained also capable of producing only slight poisoning, and inoculations can be carried through a successive series of fowls with a like result. Each of these fowls had by this inoculation with a weakened or attenuated microbe become protected against the original and virulent microbe.

In the case of the pathogenic micro-organism of anthrax, this great pioneer in the field of the microbian etiology of disease discovered similar facts. If grown outside of the body at a temperature of 42.5°C. for eight days, this microbe could no longer produce the disease in susceptible animals, but, notwithstanding, it endowed them with a certain degree of protection against the original virulent

microbe. Similar results were obtained with the microbe of hog fever, and it is important to note that a duration of immunity exceeding that known to be produced by any toxin was obtained, for the protection following inoculation of the attenuated microbe lasted for at least one year.

These instances are sufficient to show that immunity equally with poisoning is dependent upon a soluble substance produced by the micro-organisms; that the duration of even a high degree of immunity resulting from the introduction into the body of the immunising substance as distinguished from the microbe is only of brief duration: and, accordingly, with the existing evidence, it is impossible to account for the prolonged immunity following upon the recovery from many infective diseases, or from inoculation with vaccine lymph, otherwise than by assuming that so long as immunity continues the microbian sources of infective disease continue to exist in an attenuated and otherwise modified form in the protected body.

Attenuation for the purposes of protection would therefore appear to be essentially a process in which the condition of life of the microbe is so altered that its capacity for manufacturing poisons is weakened or destroyed, while its disease-preventing properties are retained. Unless by education we can so tame and civilise a pathogenic microbe as to subdue its virulent and hostile disposition, while at the same time its beneficial and protective properties are left unimpaired, the hope of obtaining—as for plague, cholera and tubercle—immunising vaccines equal in efficiency to the lymph of vaccinia will probably never be realised.

The theory which I have suggested implies that long-enduring protection from infective diseases cannot be obtained by the introduction into the body of either the poisonous or the immunising products of microbes—the toxins or antitoxins—but only by inoculation of such microbes, as are capable in the body of assuming a non-virulent form, or of microbes already converted into this form.

I would here point out that, however highly we may value the objects and success in some important directions of the experiments of Dr. Monckton Copeman and others on the effects of glycerine upon vaccine lymph, it must not be overlooked that the powerful microbicidal action of glycerine upon the contaminating organisms of this lymph may, in the course of time, weaken or even destroy the activity of the specific organism by which the long-lasting protection against smallpox is produced.

In the case of some diseases it is possible that the modification of the pathogenic power of the micro-organism necessary to convert it from

a poison-producing to an antidote-producing agent cannot be accomplished in the body. Thus may be explained the failure of certain diseases to protect the body from subsequent attacks of the same disease, well recognised in the instances of pneumonia, influenza, diphtheria, rheumatic fever, erysipelas and tubercle. On the other hand the microbes of other diseases may, in small numbers, and attenuated both in virulence and in power of conferring protection, persist in the body after convalescence has been established and actually rendered it not only more susceptible to fresh infection but also to a recurrence of the disease by auto-infection. Results obtained by experiments with toxin and venom support the former possibility, for owing to some as yet unexplained individual peculiarity, an animal which had received a number of successive doses of toxin or venom, each considerably below the minimum lethal, instead of having thereby acquired protection, may unexpectedly exhibit serious symptoms of poisoning, and may even die when it receives a dose considerably below that required to produce death in an animal which had not previously received any toxin or venom. The probability of the second event is supported by the well-known effects upon the life and pathogenic power of microbes of changes, even although slight, in the conditions to which they are subjected. A change in temperature, the addition to, or removal from the fluid in which they are grown of a minute quantity of a chemical substance, may convert a non-virulent form of a pathogenic organism into a virulent form. Similar causes may, outside the body, also render moderately or intensely virulent a previously non-virulent microbe, and thus may be explained variations in the severity of epidemics, as well as the occurrence of outbreaks of infectious disease not originated by infection from any previously existing case.

The dependence of microbial existence upon the composition of nutrient media may also partly account for the age liability which forms so conspicuous a feature in the history of such infectious diseases as scarlet fever, measles and whooping-cough. Further, pathogenic microbes, attenuated as to their virulence, but not as to their protective power, may enter the body and render it immune by a process of accidental vaccination: and thus may be explained, without recourse to such unsatisfactory phrases as individual or racial peculiarities, well-authenticated examples known to all of us, of repeated exposure to infection without the production of disease, and of the immunity enjoyed by the inhabitants of towns and districts subjected to the virus of typhoid fever, malaria, or yellow fever.

These are not mere hypotheses, unsupported by experimental data.

Describing the results of his experiments on anthrax, Pasteur states that when fowls are inoculated with the virulent microbes of this disease, they remain well until they have been cooled down to subnormal temperature; and in the earlier stages of the poisoning thus induced, if the temperature be again raised, the symptoms of anthrax disappear and the fowls recover. Anthrax microbes, as well as those of fowl cholera, if cultivated at a temperature between 42° and 43°C., acquire varied degrees of lethality according to the age of the culture, and the microbes of each variety of lethality can be almost indefinitely reproduced by maintaining certain conditions of cultivation. If microbes so grown as to be no longer able to produce anthrax in rabbits are first inoculated in a successive series of experiments in young, and, for that reason, extremely susceptible rabbits, and if the microbes obtained from the last of the series are then inoculated into somewhat older and finally into adult rabbits, the original virulence of the microbe is found to have been regained. "The work in my laboratories," he states, "has established that pathogenic microbes are not morbid entities. They can assume various forms of physiological activity, depending on the media in which they live and multiply. As a consequence, one can modify their virulence. It can be exalted or enfeebled, and each state can be fixed." Impressed by the far-reaching possibilities suggested by these and other fruits of his fertile imagination, it is not astonishing that the great discoverer, whose divining rod of science had thus thrown a clear light on the mysteries of centuries, should exclaim, "The hour has now arrived when we may enter the enchanted grotto full of priceless treasures."

Passing now to consider the origin of the protection-producing substances—antitoxins or antivenins—it is important to bear in mind that the symptoms of a pathogenic disease, the toxic phenomena by which it is characterised, are, with a few doubtful exceptions, directly caused by the poisons generated by micro-organisms, and not by the micro-organisms themselves. The production of microbicidal agents does not, therefore, in connection with this question, require consideration, but it may be pointed out that there is evidence of the production, both by toxins and micro-organisms, of substances specially unfavourable to the vitality of the micro-organisms themselves.

The production of antitoxin in the body, whether following the introduction of virulent microbes or of toxins entirely free from microbes, has generally been explained by a reaction occurring in the tissues of the body, whereby either a proliferation of leucocytes and the production by them of the protecting substances is excited, or the normal cells of the body are stimulated in such a way that they secrete the protective substance.

I have, to some extent, already discussed the question of phagocytosis, which is involved in the first explanation. To the objections that have been stated there are others which can be derived from the results of observation and experiment. In many instances, when immunity to a high degree has been produced by venom, no increase can be found in the number of leucocytes immediately, or at varying periods, after the subcutaneous injection of large, though, in the circumstances, easily tolerated doses of venom. Further, when one-half more than the minimum-lethal dose of venom is mixed outside of the body with antivenin, and the mixture injected into an animal, the quantity of antivenin required to prevent this lethal dose from producing death is only the quarter of a cubic centimeter; whereas if the antivenin be administered half an hour before the same dose of venom, as much as 3 cubic centimeters are required. That is to say, in conditions which are the more favourable for the proliferation of leucocytes, or for the production by them of protecting substances, the antivenin is less efficient as a protecting agent than when the conditions are much less favourable.

As to the second theory, often termed the reaction theory, it is also opposed by the experiments I have last mentioned, but equally so by the fact that a high degree of immunity can be produced by an appropriate adjustment of doses without any observable reaction occurring. Even when a distinct reaction, such as an elevation of temperature, is produced during the process of immunisation, the production of the reaction is in itself of no other significance than a dose of an active substance, sufficiently large to cause an observable effect, had been administered.

The subject, however, is surrounded by difficulties, not a few of which have arisen from the attempt to obtain an explanation without separating the influence of the microbe from that of the toxin, with the result that biological conceptions have perhaps been introduced unnecessarily into the consideration and discussion of the subject. As a contribution to the solution of the problem I would advance the following facts: Although searched for, no proteolytic or fermentative action has been discovered in the case of any toxin or venom; by subjection to certain external influences, such as elevation of temperature, and the influence of electric currents and of certain chemical reagents, toxins and venoms may have their poisonous action destroyed, while the immunising or protective action is retained; and toxins have been found actually to contain protective or remedial substances along with their toxic ingredients, as shown, for instance, by Hunter in the case of the toxin of tubercle.

These considerations suggest that the protecting substance originates directly from the toxin, or is indeed an ingredient in its complex composition. The suggestion is supported by experiments which show that the degree of protection artificially produced in an animal —for it is, perhaps, not unnecessary to state that protection and immunisation are only relative and not absolute—is proportional to the total quantity of toxin or venom introduced, rather than to the amount of reaction produced in the animal by any of the several administrations. The remarkable facts which have been described in connection with the stomach administration of venom, obtained also by Ehrlich and Kobert with the somewhat similar bodies abrin and ricin, and by Valli with the virus of hydrophobia, seem likewise to receive their most satisfactory solution on this supposition. A dose of venom, several hundred times greater than is requisite to produce death by subcutaneous injection, fails when introduced into the stomach to produce any poisonous symptom whatever, but still so protects the animal that considerably more than the minimum-lethal dose may now be subcutaneously administered without producing death.

It is difficult to account for these facts otherwise than by assuming that the venom while in the alimentary canal had been subjected to a process of analysis, as the result of which its toxic constituents had been separated from those that are antitoxic or protective; and while the former had either been destroyed or had failed to be absorbed, the latter had passed into the blood in sufficient quantity to protect the animal against otherwise lethal administration of venom.

There are, undoubtedly, many facts still required before a convincing explanation can be formulated of the origin of the antitoxic substances that appear in the body after the reception of pathogenic or other similar toxins: but the facts already ascertained appear to indicate that the antitoxic or immunising substances originate not from vital reactions upon constituents of the body, but from the toxins themselves, being produced by chemical changes in them, or being actually among their normal ingredients.

The question is not only of scientific interest but it has also a practical bearing. The manufacture of the immunising substance is attended with much difficulty. A satisfactory antitoxin can rarely be obtained until a tedious process, extending over several months, has been followed. Antipneumococcus serum requires as long a time as six months, the immunising serum of yellow fever from twelve to eighteen months, and the nearest approximation yet obtained to a satisfactory protecting serum for tubercle the almost impractical period of several years. Were it recognized that the antitoxin originates

directly from the toxin, the preparation of it would be freed from existing difficulties and mysteries, and, after some necessary chemical research, it could be produced in the laboratory and thus brought into closer relationship with ordinary medicinal substances.

Any generalisation in medicine, while it may serve the useful purpose of emphasising advancement in knowledge, must remain barren of practical result unless it also supplies general principles as well as specific indications for treatment. It may with some confidence be stated that the doctrine of the toxic origin of disease does not fail in these respects.

In the case of ordinary poisons it has been well established that recovery is largely promoted by hastening the removal of the poison from the body, especially by means which it is the province of pharmacology to indicate; and the eliminative treatment which has long been followed in many diseases thus finds in their now definitely established toxic origin a sufficient explanation and justification. Clinical and experimental evidence, not restricted to ordinary poisons, but gained also from the study of the effects of toxins and venoms, has taught us that treatment should also include the adoption of measures for increasing the resistance afforded by the body to toxic and morbific processes. If a dose of venom below the minimum lethal be administered to an animal, and, after all obvious symptoms of poisoning have disappeared, this dose be followed by a second, also considerably below the minimum lethal, the animal may die, although each dose was in itself insufficiently large to cause death. If an animal has been inoculated by a non-lethal quantity of a virus of a recognised disease such as anthrax, and, after recovery has apparently been established, if a non-lethal dose of the virus of another disease be inoculated, death will follow the inoculation of the second dose, although that dose is quite insufficient of itself to produce death in an animal which has not previously been thus treated. In both cases the power of resistance has been so weakened by the first and apparently recovered-from administration that a quantity of virus in itself insufficient to cause death now succeeds in doing so. From such examples the explanation is found of the widely prevalent employment of means to increase the strength or resistance of a patient, of the value of tonics and foods and of fresh air and light, not only in promoting recovery from illness, but also in actually preventing a fatal termination. Expressed in another form, they constitute means for slightly increasing for any given degree of disease the minimum quantity of the disease-producing influence or substance required to produce that degree of disease.

These as well as other methods of treatment that might be referred to do not, however, directly affect the true cause of the malady. Hitherto this cause could be counteracted or opposed only in the instances of the well-known poisons which are dealt with by toxicology, and of a very few diseases such as ague and syphilis, in which the cause was surmised, without being proved, to be a poisonous substance: and in substances fitted to antagonise these poisons by chemical combination, or, though only to a limited extent, to counteract their effects by physiological processes, therapeutics has possessed satisfactory resources. By the demonstration of the production of many diseases by toxins generated by micro-organisms, the opportunities for the application of these principles has been greatly extended. Diseases whose treatment had previously rested on an uncertain basis have now been brought into the range of rational therapeutics: and it has been shown that morbific processes which had already become so definitely established as to display serious symptoms can be entirely arrested, and, above all, that illnesses which would otherwise inevitably terminate in death may be so perfectly controlled that the fatal termination can be prevented and recovery ensured.

A dose considerably above the minimum lethal of the toxin of tetanus is administered to an animal. Several hours after the administration, when symptoms of tetanus had manifested themselves, the antitoxin of tetanus, derived from an animal which had been immunised against the virus, is injected under the skin, and in a short time afterwards the symptoms of the disease disappear and the animal recovers.

A dose of cobra venom sufficient to cause death in two or three hours is administered to an animal; the venom illness is developed, and while it is quickly advancing to apparently an early death, a dose of antivenin—the blood serum of an animal highly immunised against this venom—is administered, and by-and-by the symptoms become mitigated, and in a few hours the animal, which otherwise would certainly have died, is restored to a perfectly normal condition

By this antidotal treatment, further, not only is disease arrested and even death conquered, but the structural alterations in the muscle fibre and elsewhere that the tetanus toxin produces, and also the acute and rapid changes in the parenchyma of the kidney characterising the poisonous action of serpent's venom, are altogether prevented from occurring.

How are these marvellous therapeutic or curative effects to be explained? The explanations that have been advanced are essentially the same as those applied to the production of immunity, and they have already been disposed of in the discussion of that subject. Specially bearing on the therapeutic aspect of the question are the

further considerations that antitoxins are destitute of any distinct physiological action, and founding on Declory's recent work on antivenin, antitetanin, and the antitoxin of diphtheria, they have even no influence on the processes of ultimate nutrition. Their curative action cannot therefore depend on physiological antagonism, and it is highly improbable that it has any biological basis whatever.

Referring again to experiments made with serpents venom, when this venom in lethal quantity is mixed in a test tube with a small quantity of antivenin, the venom almost instantly loses its toxic power. Further, if the smallest quantity of antivenin required to produce this change after contact for a definite time with a lethal quantity of venom be determined, it will be found that if the time of contact is lessened this quantity of antivenin is no longer able to remove the toxicity of so large a quantity of venom. When again, venom is injected under the skin of an animal at the same time as, but in a different position from the antivenin, the quantity of the latter required to prevent death is for the same dose of venom about twelve times larger than when the two substances had been mixed together before they were injected. Such distinctions are difficult of explanation otherwise than by supposing that a combination, chemical or mechanical, is effected between the antivenin and the venom, for they indicate that when the conditions are the more favourable for ensuring contact between the antitoxin and the toxin, the antidotal action is more powerful than when the conditions are less favourable for this contact.

This view is also supported by the fact that if the antivenin be administered after the venom, the dose of the former required to prevent death is enormously larger than when the two substances are simultaneously administered after they have been mixed together outside of the body. In the case of antivenin and venom the difference is as great as 1 to 1,200.

This experimental result, harmonising altogether with a physical as distinguished from a biological explanation of the antidotal action of antitoxins, emphasises the lesson, gradually receiving acceptance in practice, that for the effective treatment of an infectious disease the quantity of antitoxin must be a very large one, and at least 1,000 times greater than is indicated by the *in vitro* experiments by which their antidotal power has usually been determined and standardised.

For this reason the antitoxic serums frequently in use at the present time must be regarded as too dilute solutions. It is indeed probable that the process of immunisation, even when carried to its utmost limits, is incapable of producing antitoxic serums sufficiently powerful, in doses which can be administered, to cure a patient suffering from

the effects of a large lethal quantity of toxin. Chemistry, however, has as yet left almost untouched the investigation of antitoxic serums, and it may confidently be expected that, when more knowledge has been obtained of their chemical composition this difficulty will be overcome by the separation of the curative from the worthless ingredients.

By such results as are exemplified in the experiments that I have described a new era has been originated in practical medicine. Considering how limited were the means—if, indeed, they previously had existed—of actually preventing death when the fatal disease conditions were already present, a special fascination attaches itself to the subject of the antidotal treatment of disease, the newly created serumtherapeutics. It has merely entered the first stages of its development, and has had to contend in its applications to human beings with the difficulties presented by the presence of undiscoverable amounts of disease toxins, diffused by living generators, which are present in the body in unknown quantities and in varying toxic potentialities. The results already obtained are, however, of much value. Diphtheria has had its case mortality reduced from 70 per cent. to 26 per cent., or, according to another estimation, from 40 per cent. to 8 per cent.; hydrophobia has been so far brought under therapeutic control, by means which have not as yet been developed to their full efficiency, that the mortality has shrunk at least from 16 to 1 per cent.; the prognosis of tetanus has been deprived of much of its gloomy forebodings; the cure of pneumonia, of tubercle, of erysipelas, and of septicæmia is on the eve of being realised; a complete demonstration has been obtained of the power of antivenins to prevent the toxic and lethal effects of venoms; and the experimental data are being surely accumulated for completing the greatest triumph of preventive medicine by the discovery of an antitoxic serum for the cure of smallpox.

These, however, are to be regarded as merely the first fruits—in some cases requiring further maturing by the light of science—of the ample harvest which is ripening. Their acquisition, at the same time, has been sufficient to supply materials for constructing, in perfect outline, the doctrine of the toxic origin of disease to which I have ventured to ask your attention. This doctrine has at least the merit of being able to bind together in one harmonious unity the conception of the actual nature or essence of a large number of diseases, including those which most urgently demand consideration. It supplies a simple and intelligible basis for treatment. Under its directing influence it may confidently be anticipated that Medicine will reach a position of definiteness previously unattainable; and, above all, that the healers of disease will have their resources in this beneficent function rendered more effective and valuable for mankind.

RETROSPECT

OF

CURRENT LITERATURE.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

The Immediate Correction of the Deformities Resulting from Pott's Disease.

GOLDTHWAITE. "The immediate correction of the deformities resulting from Pott's disease."—*Boston Medical and Surgical Journal*, July 28th, 1898.

Somewhat startling were the proposals of Chipault in 1895, and Calot in 1896, to forcibly straighten, by extension and pressure upon the hump, the angular deformities resulting from Pott's disease. In their earlier work these surgeons not only straightened but wired the spinous and in some cases the transverse processes together. It appears, however, that at present they have given up the cutting part of the operation and rest satisfied with simply correcting the deformity by force, and immediately applying a retaining apparatus, made as a rule, of plaster-of-Paris.

It now transpires that Chipault and Calot were really not the first to adopt this method of treatment. In Adam's "Genuine Works of Hippocrates" we read that the forcible removal of "gibbosities" by succussion and extension was already an old method of treatment, five hundred years before Christ. In those days, the patient was carefully extended on a ladder, the legs and hips being made fast and the ladder with the patient suspended head down was fastened to the gable of a house or to a mast set in the ground and steadied by its ropes. Extension was then made.

Again Ambrose Paré writing in 1647, in an article entitled "How to Restore the Spine Outwardly Dislocated," describes a method which closely resembles that followed by Calot and the French school at the present time.

Yet as truly stated by Goldthwaite, however much the operation

may have been performed in the distant past, certain it is that for many years or generations the treatment has consisted in fixation of the spine in the deformed position and in limiting the deformity as much as possible. To Chipault and Calot must be given the credit of this present radical departure from the conservative methods so long in use.

The exact operation, as commonly performed both in England and on the continent, is described by Jones as follows: "Having determined to forcibly reduce the deformity in a case of Pott's disease, it is necessary to carefully prepare our patient, more especially if the plaster corset recommended by Calot be applied. For two or three days previously the patient should be dieted with a view to supplying nourishment and avoiding waste concretions. The bowels should be thoroughly opened so that if necessary abdominal pressure may be applied by the hand without risk; and for the same reason the bladder should be empty. It is hardly necessary to state that the skin should be deodorized and disinfected, and the head should be shaved. In order to avoid insect life, the scalp should be treated for a sufficient time. An assistant should now prepare the traction bandage. This consists of two linen bands a yard long. The centre of one piece is placed around the occiput, the centre of the other around the chin. They must meet beneath the ear on each side, and at this point be firmly fixed by safety pins. The free ends are knotted and an assistant takes a loop in each hand, or, more convenient still, the loop may be attached to a cross-bar of wood or other material. The linen bands must be of equal length, otherwise the head is not pulled in line with the spine. They should be fully a yard long in order that the assistant who controls the head may be well out of the way of the anæsthetist. This traction is quite essential as one cannot act upon the spine by manual grasp upon the head for any length of time. In addition to the assistant who controls the head, six others are needed: Two for the arms, two for the legs, one for the chloroform, and one to directly assist the operating surgeon.

Chloroform having been administered, at a given signal traction must be exercised. If the patient be small he need not be supported by chest or pelvis rack. A child of two and a half years requires a pull of 220 kilos, before the neck is dislocated. Traction, therefore, measured if necessary by a dynamometer, should be well within that strength. Roughly speaking, five men pulling with a force that soon tires, rarely exceed 70 kilos, so that the danger of dislocation is very slight. All, however, should pull together, and there should be no jerk. This applies more especially to the assistant who controls the

head. Simple traction will reduce the deformity in a large number of cases, particularly in curvature situated high up. If it does not, direct pressure must be applied to the hump. An assistant places his hand upon the abdomen, with sufficient power to feel the bodies of the vertebræ, and it is to anticipate this pressure that I have advised a careful diet and an empty bowel. This pressure on the vertebræ on the front is a check to the surgeon who presses directly upon the hump, and who uses sufficient force to reduce the deformity, if he can do so with safety."

Goldthwaite was surprised at the ease with which the deformity was in the great majority of cases overcome, and also at the difficulty of preventing a recurrence of the malposition. When the plaster corset was applied the spine was straight, when removed considerable recurrence of deformity found. He then tried the plan of turning the patient on the back and allowing the weight of the trunk to rest upon a small upright placed immediately beneath the most prominent point of the kyphosis. This plan gave much more satisfactory results, in fact this position was, in many cases, all that was required to overcome the deformity in the first instance.

In his earlier cases ether was administered but he found that it was not by any means always necessary, as in cases of not over one or two years duration the spine could be straightened without any anæsthetic and with little or no pain to the patient.

The plaster should include the pelvis and perhaps limit the motion of the hips, and should be carried high enough to hold the shoulders well back. He found it unnecessary to apply the helmet unless the disease extended above the fourth dorsal vertebra.

As a matter of experience, it has been found advisable to practically always cut a small window over the point of greatest deformity, as otherwise when the body settles down, as is inevitable, a slough will form even though a liberal amount of padding has been used.

In some, two or three sittings are necessary to obtain a satisfactory position.

Dr. Gibney showed two boys before the Section in Orthopædic Surgery of the New York Academy of Medicine, held on March 18th, whose backs he had straightened by forcible extension and manipulations. No fever or other untoward results followed the straightening. He thought there need be no fear that forcible correction would set up tuberculous action in the meninges or elsewhere: it was exceedingly rare, he said, for dissemination of the bacilli to follow the forcible correction of deformities of the hip, as had been found by years of experience.

It is too early to pronounce upon the wisdom of this treatment. It has been thought by many that the process of repair after straightening would be insufficient in quantity and quality to maintain the bodies in the corrected position. In at least two autopsies, performed in England, some months after forcible correction, very little repair had taken place. Nevertheless, the reports of cases in America, England and the Continent are so favourable, that one feels it almost a duty to adopt this plan in suitable cases.

Geo. E. Armstrong.

Ophthalmology.

UNDER THE CHARGE OF J. W. STIRLING.

Protargol in Eye Disease.

A. Darier. *La Clinique Ophthalmologique*, March 25th, 1898.

Fuerst. *Fortschritte in der Medicin*, No. 4, 1898.

Pergens. *Klin. Monatsblatter f. Augenheilkunde*, April, 1898.

This drug is finding considerable favour among European ophthalmologists for affections of the conjunctiva attended with mucopurulent discharge.

Darier dilates on the value of protargol in purulent conjunctivitis, and in these cases uses a solution of a strength of from twenty to fifty per cent. He considers there is no danger in the employment of even the fifty per cent. solution, and that the action is practically painless. The bactericidal action of protargol is equal to and indeed better than the other salts of silver. As a prophylactic in children born of mothers who have a vaginal discharge, it may be used in a ten to fifteen per cent. solution.

Fuerst highly recommends protargol, and holds that it is preferable to nitrate of silver in that it is less easily decomposed, less irritant and does not stain the clothing.

Fuerst prefers a solution of ten per cent. strength, made by rubbing 10.0 of protargol, and 10.0 of glycerine into a paste, and dissolving this in 90.0 of water.

Pergens says that protargol does not irritate healthy eyes. He uses a two to five per cent. solution—but in dacryocystitis and blennorrhea a ten per cent. solution. He instils it into the eye six times daily in catarrhal conjunctivitis, but in mild cases thrice daily suffices. In ophthalmia neonatorum, Pergens uses a twelve per cent. solution every hour, resulting in "rapid" cure. In chronic cases the results were not very favourable.

Cocaine in Ophthalmology.

Germaix. *Recuril d'Ophthalmologie*, April, 1898.

There is but little new or startling in Germaix' contribution to the voluminous literature already published on cocaine, yet his paper is of

value as a remembrancer of sinister possibilities in these days of constant and sometimes careless use of cocaine.

Germaix specially refers to the use of cocaine in plastic operations, and reports two cases of severe depression resulting from the use of it. His deductions are that if several areas are to be operated on, cocaine should be injected into but one at a time, and the operation forthwith performed to allow of the rapid elimination of the drug. Much caution should be observed in emaciated patients or those suffering from cardiac disease, but even here the action of cocaine is not so dangerous as the general anæsthesia of chloroform. If any symptoms of collapse appear the patient should be placed in the dorsal position, with the head inclined downwards, and caffeine administered. This treatment has, in Germaix's experience, been invariably successful.

The Pupil.

Schirmer, "Experiments upon the pathology of the pupillary diameter and centripetal fibres."—*Arch. f. Oph.*, XLIV., 2.

Bach "The ciliary ganglion and the centre for the pupillary reaction."—*Ophthal. Klinik.*, March 5, 1898.

Wolff. "Pupillary paralysis in carcinoma of spinal cord."—*Oph. Klinik.*, March, 1808.

Whereas there is still some uncertainty in regard to the central connections of the pupil, the appearance of any article which may be the result of research or of any report of pathological conditions which may throw light on this subject, is hailed with pleasure.

Schirmer's article is very elaborate and exhaustive, but the following are briefly the results of his labours. The centripetal pupillary fibres in the retina are distinct from the visual. They do not end in the rods and cones layer of the retina, but in the inner layer. They are most abundantly distributed to the macula, and to a lesser degree to the periphery of the retina. They are distinct from the visual fibres in the optic nerve, and are less exposed to mechanical pressure in this region than the visual fibres, but on the other hand are more exposed to inflammatory processes—hence the size of the pupil is of diagnostic value in differentiating retrobulbar compression from retrobulbar inflammation.

Their terminal organs being situated in the inner retinal layer; any retinal lesion must have extended to this layer before the centripetal pupillary fibres can be effected, hence the retina can be extensively destroyed in its outer layers and yet the pupillary fibres escape. In the optic nerve, pupillary and visual fibres from the same areas of the

retina lie close together. Hysterical, congenital and squint amblyopias do not affect the pupillary fibres.

Bach gives the results of a most extensive series of experiments, and concludes that the reflex centre of the pupil is in the upper part of the cervical region of the spinal cord.

Wolff reports a case of pupillary paralysis in which there was destruction of the posterior columns of the cord as far down as the third and fourth cervical vertebræ.

Wolff also found after examining a number of cases of paralysis and tabes, that where there was pupillary paralysis there were changes in the cervical region of the spinal cord, and where there was no pupillary paralysis, there were no changes in this region.

Amaurosis.

Borsch. "Transient amblyopia following hæmorrhage and recent binocular amaurosis following hematemesis."—*Annals d'Oculestique*, April, 1898.

Hamburger. "Amaurosis after Pneumonia"—*Ophth. Klinik.* March, 15th, 1898.

Elschnig. "Amaurosis from lead poisoning."—*Die Oph. Klinik*, May 5th, 1898.

Silex. "Amblyopia and amaurosis in pregnancy, labor, and childbed." *Monatschrift f. Geburtshilfe*, 1898.

Borsch's first case was that of a man who received a kick in the chest from a cow. Leeches were applied to the ecchymosis and allowed to come away of themselves. Severe hæmorrhage followed during the night and in the morning the vision was indistinct, and rapidly got worse until it was only one tenth in the right eye and one fifteenth of the normal in the left eye, the pupils were dilated and inactive. The fundi of the eyes were pale, the arteries contracted and the veins dilated and the edges of the discs indistinct. Examination of the blood showed marked anhematism. Tonics and iron affected a complete cure in fifteen days.

The second case was that of a man forty-two years old who had repeated attacks of hematemesis at very short intervals, of a day or so. After the third attack failure of vision was noticed, then followed a very severe attack from which he recovered completely blind. The pupils were dilated and inactive, the discs were atrophied and the vessels contracted and the left external rectus was paralysed. Sub-

cutaneous injections of strychnine for a month resulted in the recovery of light perception.

Borsch considers that the hæmorrhage drained the sheaths of the optic nerves, and this was followed by serous effusion into them which produced pressure on the nerves. Added to this was the possible influence of toxins.

Hamburger's case was a man twenty-years old who a few weeks after pneumonia lost the vision completely of the left eye and to a great extent of the right eye in a few months. The left optic disc was atrophied and the right one in the stage of choked disc. Diagnosis was made of a tumour of the optic chiasm.

Elschnig's paper is an able *résumé* of our knowledge so far of the ocular symptoms and pathology of lead poisoning. Most rarely are the external ocular muscles affected and the prognosis is generally unfavourable in these cases.

Paralysis of the sphincter pupillæ has been observed, and in one case the post-mortem showed sclerosis of the posterior columns of the cord.

The visual affections are multiple and not pathognomonic. Saturnine amblyopia is an early symptom, and is associated with interstitial nephritis. Retinitis and optic neuritis occur, and in simultaneous encephalopathic saturnina, the symptoms may simulate those of brain tumour as in a case of Westphals, where bitemporal hemianopsia was present. Except in very mild cases the result is generally optic atrophy.

Retrobulbar neuritis is not at all uncommon, and may begin with a central scotoma or a general contraction of the field of vision. The prognosis here is grave except in relatively recent cases.

Saturnine amaurosis of varying duration without fundal change, and with retained pupillary reaction has been noted and here the cause was supposed to be reflex. The explanation of the origin of lead intoxication is still "in nubibus." In the muscle paralysis it has been shown to be due to a neuritis, and also due to a pressure paralysis caused by the œdematous swollen brain on the nerves at the base of the skull.

Central affections, the isolated sphincter paralysis, and the appearance of typical tabes dorsalis, are to be explained by these effects of the lead upon the base of the brain. The seat of the pathological process in retrobulbar neuritis is principally in the canalis opticus, where the disease in the nerve bundles shuts up the large arteries.

Hemiplegic symptoms are due to spastic ischæmia which explains the negative fundus found by Westphal in encephalopathic saturnina.

Elschnig advices massage of the eyeball and where improvement occurs, paracentesis of the anterior chamber.

Silex has never observed pure amblyopia due to pregnancy, and considers all reported cases as open to doubt. The amaurosis of pregnancy is generally due to uræmia and if it persists, is due to changes occurring in the retina, it is here then a toxic symptom due to kidney changes. The pupils generally are active and the arteries are not narrowed.

Thiosinamine in Eye Diseases.

SUKER. "Thiosinamine in eye disease."—*Ophthalmic Record*, May, 1898.

The writer delails the results he has obtained by the use of this drug in cases of corneal opacities, choroiditis exudativa, and catarrhal deafness. Suker administers ½ grain twice daily by the mouth increasing the dose each day after by ¼ grain until a maximum dose of three grains daily is reached. It is best given in capsule form and never in the evening otherwise excessive dreaming will result during sleep. After six or eight weeks, the administration is stopped for ten days, then begun over again, or else diminished to ¼ grain doses for the ten days and then increased again.

In choroiditis, the best results are obtained during the exudative stage; the thiosinamine is given on account of the fibrous and cicatricial changes which take place in any form of exudative choroiditis. Of course these cases are not of syphilitic origin. The improvement in the cases quoted was very marked, but the treatment extended over some months.

In corneal opacities the result was marked: here the drug kept up a mild form of conjunctival vascularity when the full doses were reached.

J. W. Stirling

Dermatology.

UNDER THE CHARGE OF G. GORDON CAMPBELL.

A Case of Monilithrix.

GILCHRIST, "A case of monilithrix with an unusual distribution."—*Journal of Cutaneous and Genito-Urinary Diseases*, April, 1898.

This is a rare disease in which the hairs, more especially of the scalp, becoming altered in shape, present a nodose condition. In the case reported, the subject was a young physician, aged 28 years and the disease had lasted eleven years, appearing first on the anterior surfaces of both legs below the knee. Patches also appeared from time to time on the thighs and calves. The head or other parts of the body were not affected. The diseased patches were nearly devoid of hair, a few loosely set lanugo hairs and a number of stumps alone being left. At the periphery of the patch large numbers of the characteristic hairs were seen. These under the microscope were seen to present a well marked nodular appearance. They were easily pulled out, but also very brittle, and when breaking off the fracture was always at the internodal portion of the shaft, and generally the end of the stump was split up and resembled a brush. The points of interest in the case, as summed up by Gilchrist, are as follows:

1. The perfect healthy condition of the patient whose habits are particularly cleanly (bath every morning) and whose physique and intelligence are much above the average.

2. The disease commenced at about seventeen years of age, which is much later than in the majority of the previously recorded cases. Crocker says that most cases are probably congenital.

3. The perfectly symmetrical distribution was something remarkable. No case has thus far been recorded which presented such symmetry on other regions than the scalp.

4. The presence of only a slight keratosis pilaris (its mildness being probably due to the daily bath).

5. Fracture of the hair was either clean or fibrous, the latter implicating only the cuticle.

6. When traction was made on the hairs the breakage occurred at constriction, never at the node, and left a brush-like ending.

7. There appeared to be relatively more pigment at the constriction than in the nodes. This observation appears to be directly

contrary to that of previous writers, if we except Lesser's case, in which the lighter colour of the nodules was due to the presence of air.

8. The nodes are numerous and are very regular, but are not always of the same length.

9. The absence of the evidence of contagion and of any history of any one in the same family having had a similar affection.

10. There was evidence of spontaneous cure, for the hair all returned on the right thigh after the baldness had existed for almost nine years. No history of any spontaneous cure has been recorded before.

11. There were no signs of any baldness or even thinning of the hair of the scalp.

12. No cause for the disease could be discovered.

It was proved that the bacillus of trichorrhexis nodosa (Hodara's) was not present.

Appended to the paper is a list of the sixty other cases so far reported. These show the remarkable tendency of the disease to run in families, McCall Anderson recording 14 cases in 5 generations and Sabourand 17 cases in 5 generations.

What are we to Understand by Eczema?

"A discussion on the question, What are we to understand by eczema?" —*British Medical Journal,* September 10th, 1898.

This formed one of the set discussions at the Edinburgh meeting of the British Medical Association in the Section of Dermatology.

Mr. Malcolm Morris introduced the subject and in endeavouring to offer a definition of the term, remarked that he agreed with John Hunter that "definitions are most damnable things." He defined eczema as a catarrhal inflammation of the skin, originating without visible external irritation, and characterised in some stages of its evolution by serous exudations. This excludes all forms of artificial dermatitis, the difference between the latter and a true eczema being the tendency of the one to disappear when the cause ceases to act, and of the other to be continued indefinitely. On reviewing the various opinions held at different periods as to the cause of the disease the following are enumerated. Bateman's, that it is a vesicular eruption caused by various forms of irritations; Bazin's, that it was a constitutional disturbance depending upon some dyscrasia—the eczematous diathesis. These in turn gave place to Hebra's doctrine that it was nothing more than superficial inflammation of the skin due to some external cause, while at the present day Unna's teaching that it is a parasitic disease is steadily gaining ground, although many dermatologists support the

view that the disease has its origin in some disordered action of the nervous system.

With regard to the parasitic theory, Unna has found parasites which he regards as specific for both vesicular and seborrhœic eczema. These are a form of cocci which he calls "morococci" on account of their being clustered together in little masses resembling mulberries. The micro-organisms are found in the cellular protoplasm of the elements of the vesicle and the congestion and œdema of the deeper layers which is also present, is supposed to be due to the action of the toxins arising from the growth of the cocci. Unna has also cultivated the morococci, and by inoculation of the cultures produced an acute eczema. Added to these arguments in favour of the parasitic theory, is the fact that the disease has been proved in numerous instances to be auto-inoculable; and seborrhœic eczema to be contagious. Leredde, however, considers the latter disease to be due to a mixed infection.

Morris thinks that we are justified in concluding that parasites are capable of causing eczema, and that it is highly probable that it is a parasitic disease, both from the fact that the most effective remedies are of the parasiticide class and of its tendency to spread locally. He does not consider the morococcus to be conclusively proved to be the cause, but the well-known fact that most parasites must have a suitable soil to grow upon, explains the undoubted association between many of the causes already referred to and eczema. Thus, certain conditions of the integument, such as ichthyosis, seborrhœa, varicose veins, artificial dermatitis, and irritating secretions among others, may form the determining cause in many instances. When, however, eczema developes upon skin, which is to all appearance perfectly healthy, some agency is at work which lessens the resistance to the attack of the parasite, and this may be some disturbance of the nervous mechanism.

With regard to heredity, Morris believes that eczema is inherited in the same way as consumption is; that is, that the conditions which predispose to it are inherited, and if the disease exists in one member of a family the others are favourably placed for receiving infection. The old idea that eczema is to be looked upon in the nature of a safety valve "that it is dangerous to cure it by driving it in" has no basis in fact.

Morris sums up his views in the following conclusions: "It is a disease, the striking clinical character of which is the infinite variety of lesion by which it displays itself; originating in the action of parasites on a skin, the resistance of which has been enfeebled by pre-existing disease or structural abnormality or by disordered inner-

vation ; sometimes made more intractable by gout and other constitutional states, but having no direct relation to the general health."

Dr. Wallace Beatty, in continuing the discussion, pointed out the necessity, considering the polymorphous character of the disease, of determining the general features which are common to every form and how the different modifications arise. This is rendered more difficult on account of our inability to determine what the real cause is. Anatomically, he considers that all the various grades depend upon differences in the intensity of the inflammation, whether we regard the disease as parasitic or constitutional. Clinically, serous, or sero-fibrinous sticky exudation, and scaling and itching are the three essential symptoms and yet we do not invariably get all these. He considered Unna's view that eczema is a parasitic disease a most fascinating one, and one that is almost convincing. It, however, carries some difficulties with it, and these are, that it is not infectious and is, in some cases, kept up by constitutional conditions : and again, that the specific organism is also found in psoriasis which must then be considered a form of eczema.

Treatment of Lupus Erythematosus.

G. P. Unna (Hamburg). "The treatment of lupus erythematosus."—*British Medical Journal*, September 10th, 1898.

At the recent discussion in the Dermatological Section of the British Medical Association on the "Nature and Treatment of Lupus Erythematosus," Unna discussed the treatment of this disease. He does not think that there is any direct connection between lupus erythematosus and tuberculosis, and believes that a study of the histology of the disease offers the best guide to treatment. He says :

"The histology of lupus erythematosus is governed by a striking contrast between the processes going on in the epithelial layer and the subjacent cutis. The epidermis is dry, hyperkeratotic, and shows horny processes penetrating downwards, which were for a long time mistaken for comedones. The cutis, on the other hand, shows dilatations of the lymph spaces and lymph channels, œdema of the papillary body, with development of larger lymph pools and a peculiar moist channelling of the cellular territories, which is produced by the atrophy of the collagenous tissue, and the breaking down of the feebly rooted cells which are carried away by the lymphatics. The outward appearance of the dry, centrally depressed patches gives no indication that beneath these is situated an œdematous softened, rarefied, readily yielding cutis. We are, therefore, always surprised when upon very slight irritation, such as the use of a simple soothing oint-

ment, very marked inflammatory œdema appears, and the patches rise and spread peripherally in a highly unpleasant manner."

Dessicating agents then are indicated in spite of the outward appearance of dryness, and all remedies tending to produce inflammatory œdema or hyperæmia are contra-indicated. Inwardly, also, such drugs are required as are known to exercise a favourable influence upon the injurious vaso-motor paresis of the face. Carbonate of ammonia, ichthyol, and salicylate of soda are the only ones that have proved beneficial in Unna's hands, and he believes that in no case has the disease ever been cured by the use of interval remedies alone.

Externally, Unna divides the remedies of use into six categories. "Three of these include mild remedies, which may be recommended in all cases: (1) The drying; (2) the compressing; and (3) those remedies which tend to reduce hyperæmia. Next we have two categories of much more doubtful value: (4) The necrotising; and (5) the inflammatory: and to these we may add (6) the specific remedies still to be marked with a point of interrogation." As a mild flesh-coloured powder for use during the day the following is recommended: Oxide of zinc, boli rubræ, boli albæ aa 2.0, carbonate of magnesium 3.0 amyli oryzae 10.0, M f. pulvis cuticolor, or the following paste: Past. zinci sulphuratæ 20.0, rescorcini, ichthyoli aa 1.0, M. f. Pasta. Mild forms of the disease will require nothing more than the latter and for severer forms they are suitable as a preparation for the more vigourous remedies.

The compressing agents are collodion, gelanthum, zinc gelatine, and elastic rubber bands, which latter unfortunately cannot be used on the face. Collodion is the strongest, but gelanthum often the most suitable, in that it can be applied at night and washed off during the day. Collodion 20.0, sapo viridis 2.0-4.0, with or without the addition of salicylic acid 2.0, does well for indolent cases and in irritable ones ichthyol can replace the green soap.

The third group of mild remedies which produce hyperæmia includes pyraloxin, chrysarobinum oxidatum, ichthyolsulfon, mercury, pyoktanin, and lastly, the soaps and alkalies. The two latter, when properly applied approach the ideal remedy from an anatomical point of view as they reduce not only the hyperkeratotic surface but also the hyperæmia and inflammation of the cutis at the same time. They should be applied in watery solutions in wet bandages, covered with some impermeable coating to prevent drying. Day by day as tolerance becomes greater, the duration of the treatment can be lengthened and improvement is often very rapid.

In necrosing remedies we endeavour to at once destroy the diseased

tissue by chemical or mechanical means. Salicylated collodion and salicylic-cannabis-plaster mull are the best.

Ulcerative remedies consist of the strong cauteries such as pyrogallol, chloride of antimony, and carbolic acid, and the inflammatory comprise tincture of iodine, iodine and glycerine, perchloride of iron, etc. The latest addition to the list, Fowler's solution, is to be considered the safest of the lot. Unna, however, is not in favour of any of the last three groups, preferring to trust a milder application except in exceptionally sluggish cases.

In conclusion, he presents a short scheme of treatment for the practical physician. The first point to decide is whether we have to do with an irritable or an indolent case. This is in part indicated by the site of the lesion, irritable cases being those on the cheeks, nose, eye-lids, ears, backs of hands, especially if the part is only slightly hyperkeratotic, swollen, and of dark red colour. The personal factor also plays an important part but this can only be determined by experiment so it is best to begin with the milder remedies and work upwards.

G. Gordon Campbell.

Pathology.

UNDER THE CHARGE OF J. G. ADAMI.

Bubonic Plague.

CHOKSY, Khan Bahadur N. H. "Report on Bubonic Plague."—Being a report based upon observations of 939 cases of bubonic plague treated at the Municipal Hospital for Infectious Diseases at Arthur Road, Bombay, from Sept. 24th, 1896, to Feb. 28th, 1897. Pp. 58, with numerous charts. Bombay, 1897.

For the last two years we have been receiving accounts in the press, both lay and medical, of the progress of the plague in the East and these accounts have told us of the horrible mortality and of the heroic efforts of members of our profession as of the Indian Government, to arrest the progress of this most dire disease. It is, however, essential to read the official reports emanating from the affected areas to realise thoroughly the terrible ravages of the plague and the almost overwhelming difficulties which European administrators have to face in attempting to stem the progress of infection and to instil into the hordes of ignorant natives the first principles of personal and public hygiene.

In previous numbers of this JOURNAL I have referred at some little length to the work of Hankin, Haffkine and others upon the prevention of cholera and typhoid in India, and the purification of water supplies, as again to the observations made by Kitasato, Aoyama, Yersin and Lowson[1] upon the plague at Hong Kong.

In this remarkable report of Dr. Choksy, the aridity natural to official reports is counteracted by what we may term a personal note and the details given, at times pathetic, at times repulsive, make this report almost as interesting as that old and classical account of Daniel Defoe of the plague in London in 1665.

Evidently the Arthur Road Hospital in Bombay was not an ideal hospital for infectious diseases; indeed, from what we read, its one advantage was its site and the free ventilation gained from the sea breezes. The first plague patient was admitted on Sept. 24th, 1896, two more followed before the end of the month, and in October there were 85 admissions. Then the number increased until in February, 1897, cases were entered in very large numbers, the admission rate fluctuat-

[1] Vol. XXIV, pp. 450 and 995 etc., this JOURNAL.

ing between 10 and 22 daily. Unfortunately, the report does not continue beyond this date, although we know that the disease is still affecting Bombay. But this large amount of material, (close upon 1000 cases,) has given Dr. Choksy ample material for describing the disease.

The mortality was appalling; out of 939 patients, 688 died, or 73.26 per cent. Hospital treatment would thus seem to have been of little avail; nevertheless the further study of the subject gives one a different impression. According to Lowson's statistics at Hong Kong, more than 2,600 persons were admitted to the hospitals there, of whom 2,468 died, a mortality of more than 93 per cent., so that in this the Bombay figures are better than those at Hong Kong. On the other hand the difference may mean that the Hindoos are not so susceptible as are the Chinese. Then, too, the hospital had to contend against the ignorance and prejudices of the people. Time and again the patients entered in a moribund condition, past all help, sent at the last moment in order to relieve the friends. Nearly one-third of the admissions during the six months died in less than 24 hours after admission, by far the greater number of these dying within a few hours and some even within a few minutes. If these cases be subtracted, the mortality is lowered to a little over 60 per cent. Again, the treatment was misconstrued: subcutaneous injections and other means of resuscitation and support were regarded in Bombay as a means employed by the doctors to kill the patients in order to stop the further spread of the epidemic; while, further, it was freely stated that patients were killed and their hearts taken out to send them to the Queen so that her wrath, kindled by the disfigurement of her statue at Bombay in the beginning of the epidemic, might be appeased. Private letters from the Delta of the Ganges tell me the same story. The natives there regard inoculation with preventive serum as a means employed by the officials to bring about the patients' deaths. It is little wonder that such news spreading through the native population, should eventually have led to a raid upon the hospital—from 800 to 1000 natives broke open the gates and scaled the walls, stoning the staff and attempting to kill the members of the same; fortunately the police was soon notified and no one was seriously hurt.

Following Hindoo custom, the friends and sometimes the whole of the families of the patients had to be admitted to sit around the beds, and there they sat, not under any consideration for the patients but with the sole object of eliciting information from the sick as regards their belongings, property, etc. In other cases they simply came to relieve the patients of all the valuables on their persons and never appeared again; in fact, no less than 338 dead

bodies of plague patients had to be buried or otherwise disposed of at the charge of the municipality.

Over and above the friends came the hosts of pseudo-specialists, tramway conductors, railway guards, engineers, postal inspectors, clerks and so on, pestering the health and medical officers, and the small staff, which at the worst period only consisted of two medical officers, four hospital assistants, twelve ward boys, three ayahs, three cooks and six sweepers, had their hands more than full. One of the medical officers, Dr. Davla and three of the ward boys were attacked with the disease and the doctor died.

The population of Bombay is mixed and the different races showed varying susceptibility, thus the mortality among the Hindoos was 75 per cent., among the Mussalmans 66 per cent.; the number of native Christians, Parsees and "Israels" was so small that perhaps no very great weight can be laid upon the statistics. With regard to occupations, the mortality appears to have been lowest among domestic servants, policemen, shopkeepers, coolies and cooks, the highest, as might be expected, among the beggars, coachmen, tailors, milkmen, etc. Evidently those better fed had a greater chance of recovery.

Dr. Choksy divides the forms which the disease may present into six groups, namely:

1. *Pestis Minor.*—Of this scarcely any cases were seen in the hospital; there is but slight febrile reaction, while one or two glands, femoral or inguinal are painful and a little enlarged. Rest in bed is all that is needed for the patient's recovery and he is up and about within three or four days.

2. *Pestis Ambulans.*—In this form the patient has tenderness of the glands and general malaise but does not feel himself sufficiently ill to consult a medical man; in most cases the glands suppurate slowly and slough, and the patient makes a tardy convalescence.

3 and 4. *The Simple Bubonic and Septic Forms.*—The differentiation between these two is one of degree rather than of kind; so long as the bacilli are confined to the lymphatic system alone the case may be called simple bubonic, but once the blood becomes infected and the glands in general become enlarged and infiltrated the case becomes septic; thus the latter of the two is the more fatal.

5. *Pestis Pulmonalis.*—Apparently at Bombay, a not inconsiderable number of cases of this form were recognised in which infection appears to be primarily through the respiratory tract. This form is the most insidious and the most fatal and has been also a most fruitful means of spreading the infection, the sputum being loaded with plague bacilli. Intense dyspnœa is soon followed by hæmorrhagic expectoration and gradually failure of the heart's action manifests itself.

6. *Non-typical Forms*—Dr. Choksy notes that when the epidemic was subsiding, (at a period not comprised in this report), a number of cases were observed in which there was slight fever and diffuse swelling with infiltration of the parotid and cervical glands, with absence of the pain accompanying the more usual glandular enlargement. These cases came from infected districts and the general aspect, speech and state of the pulse of the patients led to their being diagnosed as non-typical cases: almost all recovered. There was also a certain number of cases in which the symptoms of the plague were followed by fever of the relapsing type, at a time when relapsing fever made its appearance in the city; evidently here were a cases of mixed infection.

Dr. Choksy has nothing new to say concerning the mode of infection. In about half a dozen cases he notes that small pimples were observed on the dorsum of the foot and, their contents having been evacuated and strong carbolic injected into them, the result was very striking, for within a few hours the buboes became less painful and definitely smaller, and all these cases recovered. But as to the cause of these small pustules he has nothing to urge, indeed he regards the theory of infection by the bites of insects as appealing more to the imagination than to reason and common sense, but why he holds this view he does not say. A mere *ipse dixit* such as this is valueless.

While the size of the bubo did not appear to determine the gravity of the case, the position exerted a great influence, multiple buboes situated in various parts of the body always indicating general systemic infection. Mortality in axillary buboes was higher than was the case with any other set of glands. As noted elsewhere the most frequent glands primarily affected were the femoral, femoro-inguinal (together 475 cases) followed by the axillary 140, and the inguinal 106: the next most frequent were the cervical, (5.25 per cent. of the cases.)

Dr. Choksy then takes up carefully the various systems, nervous, circulatory, respiratory, digestive and so on, and discusses the affections associated with each, but space forbids that we should here follow him. He notes that the most frequent immediate cause of death is failure of the heart's action, either sudden, following any sudden exertion, or gradual and accompanied by œdema of the lungs and pneumonia. He notes that in only one instance did the patient return to hospital with symptoms indicating possible relapse, also that those patients who left the hospital alive may more fitly be described as recovered, than cured.

The only two drugs that he regards as being useful are morphine

and strychnine, while as to sero-therapy he is evidently opposed to it. Haffkine's serum was employed in 15 cases, nine were cured and six died: Yersin's serum was tried only in three very early cases and the mildest of these only recovered and that after a very long and protracted convalescence. Professor Lewin, of the Royal Military Academy of St. Petersburg, tried a serum prepared according to Yersin's method, and all the cases treated thereby died. More favourable results were obtained with the serum of Prof. Lustig; this was employed in six very serious cases and all recovered. As Choksy says, the cent. per cent. rate of recovery was remarkable and remembering the ordinary mortality of the disease it seems to show that this serum had a most favourable influence.

With regard to post-mortem appearances, Dr. Choksy has nothing to add to what has already been stated by Aoyama and Lowson. The autopsies were made by members of the Austrian plague commission. Suffice it to say that the principal post-mortem sign is the existence of hæmorrhages, as Choksy says "in every conceivable and inconceivable part of the body."

J. G. Adami.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

The Canadian Practitioner.

July, 1898.

1. On the Stages and Forms of Syphilis, with more Especial Reference to the Hepatic Manifestations of the Disease. J. G. ADAMI.
2. Vicarious Urination (?) A. T. RICE.

1. Published in the June number of this JOURNAL.

2. RICE relates the history of a case, which for want of a better name, he has called vicarious urination. The patient, a woman aged 30, was of a nervous temperament, and of rather a weak intellect. She had for three years been subject to attacks of cystitis, and occasional involuntary spasms and twitchings, and her health suffered severely. In August last, her feet began to swell slightly, and the secretion from the bladder gradually diminished, but was compensated for by an exudation of fluid from the anterior portions of the lower limbs between the knee and ankle. The fluid was voided regularly three times a day, the amount gradually increasing, the average being about thirty or forty ounces a day. It simply oozed from the skin without there being any abrasion, discolouration, or œdema present. The fluid stood all the tests for urine, it was of amber colour, sp. gr., 1010, strong smell of urine on boiling, and became ammoniacal on standing, uric acid was found, but no sugar or albumen. This condition lasted until October when suddenly it ceased and urine again began to pass through the urethra. After that the natural condition gradually became established, but she again became ill, spasms reappeared accompanied by headache and swelling of the face and feet. These symptoms, however, gradually disappeared and she soon regained her usual health.

The Canadian Journal of Medicine and Surgery.

July, 1898.

1. Mental Capacity in Will-making. ARTHUR JUKES JOHNSON
2. Hip-Disease—A Clinical Lecture. B. E. MCKENZIE.

3. Epithelioma of the External Ear. F. N. G. Starr.

4. The Summer and Health Resort Areas of Ontario. E. Herbert Adams

5. The Boot as an Orthopedic Appliance. H. P. H. Galloway.

1. Johnson says that a medical man should never consent to make a will for a patient, and he should remember that if he signs his name as a witness, he not merely acknowledges that the testator did sign the will, but that he was in a fit and proper condition to do so. If a medical man is asked to decide whether a dying person is or is not in a fit state of mind to make a will, it is as a rule only necessary to ascertain whether the sick person can clearly and rationally answer a few questions put to him or can repeat unaided the provisions of the will he wishes to make. In the case of feeble minded persons a private interview should be insisted on, when the patient may disclose the existence of any undue influence. He discusses the wills of insane persons as well as wills of persons incapacitated by drunkenness, delirium, the stupor induced by narcotics, and similar conditions.

3. Starr describes three cases of epithelioma of the external ear. In the first there was a mass of thickening about the middle of the edge of the helix, and extending across the antihelix down into the bottom of the concha. The surface was vascular and ulcerating. A V-shaped incision was made wide of the disease and union took place rapidly. A year later there was no sign of recurrence. In the second case the growth affected the base of the lobule, extending into the fossa of the antihelix and involving the antitragus. It was completely removed. The third case was a cauliflower-like fungating mass, about the size of a pigeon's egg, presenting at the external auditory meatus. It apparently had commenced in the concha and completely filled that part. The man refused operation, but died of an intercurrent affection.

4. Adams makes a very strong plea for the development of the health resorts, mineral springs and watering places in Canada. He deprecates the habit of Canadian physicians sending patients on long journeys to well-advertized health resorts, when there are many far better localities close at hand. He also points out the enormous financial gain it would be to the country to have the various summer resorts well known. A comparative practical study of the climatic resources is one of the first and fundamental measures which should be adopted for the encouragement of immigration.

5. Galloway considers that the subject of boot construction has not received as much attention as its importance deserves, and doubts whether the power of variously modified boots to serve some purpose

in orthopædic practice has been as fully appreciated as it ought to be. A design for a boot for flat-foot is described, the last differs from an ordinary one chiefly in having a straighter inner border, in a greater width, and especially in having a very broad and flat sole. The heel of the boot is much lower and larger than usual, and its inner side widens out laterally as it approaches the floor, while its inner border is not only built up higher than the outer, but is continued further forward beneath the shank; the inner side of the sole just beyond the shank is correspondingly raised and projected inward. By this plan of construction the same mechanical effect is secured as if the whole inner side of the sole, shank and heel were a solid mass of leather as in the ordinary form of flat-foot boot; while at the same time the boot is not only lighter than it could be if the arch were filled up with leather, but the departure from the conventional appearance is relatively so slight that it is very exceptional to meet with patients of any class who refuse to wear it. On the inside of the boot there is a strong counter of leather, of about the same size and shape, and occupying the same position in relation to the foot as the inner flange of a Whitman flat-foot brace. It gives some support to the foot at its weakest part, and, which is still more important, by exerting pressure in this situation, it serves to remind the patient of the necessity of holding up the inner side of the foot by muscular effort.

The mechanical principle involved in the construction of the flat-foot boot may with great advantage be applied in the making of boots to be used with or without braces in cases of valgus resulting from infantile paralysis.

A boot is also described for the treatment of club-foot after the foot has been fully corrected or over-corrected by operative means. He emphasized the necessity of people wearing properly fitting boots and quotes Dr. Lovett's summary, in Park's Surgery, of the essentials of a good boot. In the manufacture of the special forms of boots it is necessary to keep a watchful supervision of the work to prevent slight departures from original models, and to guard against the introduction of unauthorized "improvements" by the workmen. To send a patient to the shoemaker with instructions to get a particular kind of boot is to court certain disappointment. The patient will almost surely suggest slight modifications with a view of improving the appearance, etc., and these wishes are obligingly met as far as possible; and if the patient is pleased with the result the shoemaker will gradually introduce more and more of his own conception of what is required, until in a few months he is turning out boots which bear little resemblance to the original pattern.

The Canadian Medical Review

July, 1898.

1. Vicarious Urination (?) A. T. Rice.
2. Abstract from Dr. Britton's Address.

1. Noted above.

The Canada Lancet.

July, 1898.

1. Some Points in Abdominal Surgery Relating to Intestinal Obstruction. H. Howitt.
2. Ontario Medical Association. The President's Address.

1. In an article dealing with abdominal surgery, and especially that of intestinal obstruction, Howitt lays stress upon complete emptying of the stomach beforehand, by means of a syphon tube, making the incision sufficiently extensive to permit the operator to reach any part of the cavity, turning out the intestines and emptying the distended intestines through one or more incisions. Two desperate cases are cited in which his technique proved successful.

The Dominion Medical Monthly and Ontario Medical Journal.

July, 1898.

1. Electrolysis in the Treatment of Nævus. Charles R. Dickson.
2. A Method of Making X-ray Observations on Hollow Organs. Morley Curry.
3. Gynæcological Notes from Paris. A. Lapthorn Smith.

1. Dickson describes the technique followed for the removal of the various forms of nævus by means of electrolysis.

2. Curry describes an experiment of mapping out hollow organs by means of the X-ray. A piece of chain was drawn through a stomach tube until the eye was reached. Thus the rubber, which is itself partially impermeable to the X-rays, was reinforced by the metal chain which is completely impermeable. The tube was then swallowed by a subject and observations were made by means of the X-rays and fluorescent screen. Looking through the body transversely the chain could be very distinctly seen in the pharynx, and in the œsophagus to a point a little below the clavicle. As the tube was pushed in and withdrawn its point could be easily followed. In the neck each link of the chain was very distinct.

The experiment furnishes an accurate method of marking the lower border of the stomach. By gradually filling the stomach through the tube its surface marking could be determined for any degree of dis-

tension. The possibility of watching the tip of the tube as it glides along the surface of the stomach suggests a method of observing irregularities of the organ due to congenital conditions, constrictions, tumours within or without the organ, etc. The extent of movement of the tube furnishes a means of determining the extent of the rise and fall of the diaphragm under different conditions. The facility with which the chain and tube are observed in the pharynx, and a large portion of the œsophagus should prove useful. Dilatations of the œsophagus could be examined by noting the various directions in which the point of the tube could be made to travel. The rectum colon, urethra, bladder, vagina, uterus, nose and all cavities accessible from the outside could be examined in a similar way. The chain used in examination of the stomach could be seen from behind when placed in the anterior abdominal wall. It should, therefore, be easily seen if introduced into the colon.

A probe introduced into the nose can be clearly seen throughout the whole extent of the nasal cavities, as the surrounding bones are so thin that they are permeable by the X-rays. By means of the X-rays it would be possible, under the guidance of sight, to grasp with metal instruments impermeable foreign bodies placed deep in the nasal cavity.

The Maritime Medical News.

July, 1898.

1. Seborrhœic Dermatitis. Jas. Ross.

1. Ross deals with the nomenclature, symptomatology, etiology and treatment of this disease.

Canada Medical Record.

July, 1898.

1. What Classes of Injuries to the Human Body depending on Violence are caused by Alcoholic Excesses. Thomas H. Manley.
2. Some Leading European Gynæcologists and their Work. A. Lapthorn Smith.

Note on Sudan III. a New Selective Stain for Fat. Arthur G. Nicholls, Montreal. *The Philadelphia Medical Journal, July 2nd*, 1898.

Reviews and Notices of Books.

Procedures Recommended for the Study of Bacteria, with Special Reference to Greater Uniformity in Description and Differentiation of Species. Being the report of a committee of Americen Bacteriologists to the committee on the pollution of water supply, American Board of Health Association. Concord, N. H., 1898.

We have a peculiar pleasure in drawing attention to this very remarkable report, inasmuch as the movement which resulted in its production, originated in Montreal.

All who have interested themselves in bacteriological research, have for years been hindered in their work by the fact that upon turning to the literature, in order to discover whether a form studied by them had been already described, they have found that the descriptions given are so vague and so imperfect that further research along many lines has been hindered because of the uncertainty lest the observer should be wrongly adding yet one more to the hosts of descriptions of species already upon record.

To remedy this state of affairs, at the instigation of Dr. Wyatt Johnston, Dr. Adami wrote to the several laboratories on this continent to see whether any scheme could be arranged for collective investigation as it may be termed, upon the more common forms of bacteria, so as to obtain well worked out and standard descriptions of the same, and in 1894, when the meeting of the American Public Health Association met at Montreal, Major Smart, (now Deputy-Surgeon General, U.S.A.), chairman of the committee upon the pollution of water supplies of that Association, became actively interested in the matter, and in his report suggested that there should be a co-operative investigation into the bacteriology of water supplies, as a means of bringing order out of chaos of the literature of water bacteria, and of throwing light upon the bacteriological side of questions of practical sanitation.

This suggestion originating from Dr. Wyatt Johnston, was approved at the association and Dr. Smart was authorised to build up a committee for this purpose. As a first step, Dr. Smart appointed a sub-committee consisting of himself, Mr. Geo. W. Fuller, (a leading authority upon the bacteriology of water) Prof. Adami and Dr. Wyatt Johnston, to determine the methods of laboratory procedure to be

adopted by the committee in the practical work in the investigation. This sub-committee immediately found that it would be impossible to proceed any further until something authoritative could be laid down as to what might be termed, standard bacteriological technique. So great is the need for a clear and authoritative pronouncement upon bacteriological methods, that when it was suggested that a meeting be called to discuss this subject, the suggestion met with a most hearty response, and in June, 1895, most of the prominent bacteriologists of North America came together at the Academy of Medicine in New York, and for two days a most fruitful discussion was carried on under the chairmanship of Professor Welch, upon such subjects as the reaction of media, the composition of media, the synthesis of media, and the methods of determining pathogenesis, morphological characters, and so on; in fact upon many of the basal problems which confront the practical bacteriologist.

The proceedings of that convention form a mass of some 170 pages of small print, in the *Journal of American Public Health Association* for October, 1895, and as a result of that meeting, a committee was appointed consisting of Drs. Abbott, Cheesman, Smart, Theobald Smith and Welch, Prof. W. T. Sedgwick and Mr. Geo. W. Fuller with Dr. Adami as chairman. To this committee power was given to draw up a report upon bacteriological technique and procedure, in conformity with the recommendations accepted by the convention.

The present report is a result of that resolution. Simple as might seem the work of placing this matter of bacteriological technique in an orderly and useful form, the difficulties before this committee were very great, and the amount of time and trouble determining what is best and most to be recommended, and of reaching conclusions upon minute details which should gain general acceptance, has been extraordinary, for practically the committee was breaking new ground. Previously each man had been a law unto himself, and according to his training and the traditions of his laboratory, so did his technique vary from that of other workers. The first framework of the report was drawn up by Dr. Adami and submitted at a meeting of the members of the committee, then circulated in manuscript and the criticisms, generally upon minute details, which, however, are of importance in a science which strives to be exact, were discussed at a meeting of the committee in New York. The final drafting of the report was given to Dr. T. M. Cheesman of Columbia College. He again, in the determination of minute points has given a year's work to the subject.

Naturally bacteriology being an advancing subject, and new methods being constantly devised, not a few of the recommendations

of the committee may prove to be of but temporary value, nevertheless we cannot but believe that in the publication of this report, an enormous and, it may be an epoch-making stride forward has been made: for now at length there is in the hands of bacteriologists, an authoritative recommendation of what is necessary in the study of species of bacteria for publication, and henceforth there will be no excuse for imperfect descriptions. At the same time the report will necessarily afford abundant work for younger bacteriologists to review previous descriptions and to publish standard descriptions of bacteria, pathogenic and non-pathogenic. In fact, a remarkable impetus will be given to exact bacteriological research. J. G. A.

Conservative Gynæcology and Electro-Therapeutics. By G. Betton Massey, M.D. Third Edition. Philadelphia, New York, Chicago: The F. A. Davis Company, Publishers.

This book is an enlargement of a former treatise which dealt with the use of electricity in fibroid tumours and certain other affections. In its present shape the author claims that it is "A Treatise on the Medical and Surgical Diseases of Women, with special reference to the therapeutic use of electricity."

In reviewing this work it is necessary to regard it from two standpoints, viz., as a guide to the technique of electrical applications, and as a manual dealing with the treatment of gynæcological affections.

As regards the first of these, it must be freely conceded that the book deals freely and minutely with electrical appliances and the method of using them.

Considered in relation to the practice of gynæcology, however, the work can only be regarded as highly unsatisfactory.

It is an elaborate plea for the employment of electricity as a therapeutic agent, the consideration which is given to other forms of treatment being scanty and extremely ill-balanced. Indeed, from the point of view of the scientific study of gynæcology, the book fails sadly in the direction of giving to things their proper proportional values.

Its fantastic advocacy of the value of electricity smacks too strongly of the extravagantly praised and highly advertised universal panacea or healing elixir.

The author has a special animus against the gynæcologist who flourishes the bloody knife, and, in his effort to overthrow this horrid man, with his electric buttons and needles, only succeeds in illustrating that "vaulting ambition which o'erleaps itself and falls to the other." "Conservative Gynæcology," forsooth! The very name is an unwarrantable one. As if conservatism and electrisation were synonymous terms. The *rationale* of conservatism in medicine lies in the wise endeavour to understand the meaning and application of the "*vis medicatrix*

naturæ." The attainment of scientific therapeutic precision can only proceed *pari passu* with the retrogression of empirical procedure and can most surely follow the strenuous study of physiology and pathology.

It is not a question of pills or knives or electricity—but rather of interference and non-interference with nature's processes; the correct adjustment of the delicate relationship between these two habits should be the aim of the judicious therapeutist.

As regards the application of these principles to the treatment of diseases of women, it is necessary that the procedure must be subject to modification on account of the peculiar nature of the field of work. A very important objection to the use of electricity is the frequency with which applications require to be made.

It is decidedly objectionable to make twenty or thirty applications of electricity to a woman's genitalia, when the same results can be obtained by other means. The reviewer condemns all therapeutic treatment which involves frequent examination of the pelvis, and he considers just as reprehensible the pernicious habit of subjecting women to long courses of local tinkering, whether of the nature of electrical or digital touches, tamponings or swabbings.

In many cases, therefore, the knife may prove to be the true conservator; though, in making this statement, the reviewer by no means desires to condone the excessive use of this instrument prevalent in many quarters.

Were electricity as potent as its advocates claim it to be, there might be some excuse for allowing to it extra license in gynæcology. But it has failed to take rank in the opinion of the majority of scientific gynæcologists. In Great Britain, surgically the most conservative among the leading nations, it has scarcely taken a foothold. Not even the great name of Thomas Keith could suffice to establish its claims. His advocacy of electricity was received in amazement by the whole gynæcological world, and though several, through his influence, were led for a time to give an extended trial to Apostoli's methods there was afterwards an extensive abandonment of them.

It is interesting to note, also, that, at a recent meeting of the American Gynæcological Society, in which a discussion on this subject took place, very scant recommendation was given to electricity as an important therapeutic agent in gynæcology, and even its most pronounced advocates placed limitations to its employment far below those accorded to it by the Apostoli school.

The attitude of the leading German gynæcologists is a matter of notoriety.

In criticising Dr. Massey's book, the reviewer has endeavoured to express his honest opinion, believing that its influence can only be prejudicial to the development of rational therapeutics in the department of diseases of women. J. C. W.

A Manual of Instruction in the Principles of Prompt Aid to the Injured. By Alvah H. Doty, M.D., Health Officer of the Port of New York, late Major and Surgeon, Ninth Regiment N. G. S. N. Y.; late Attending Surgeon to Bellevue Hospital Dispensary New York. Second edition, revised and enlarged. New York: D. Appleton & Company. 1898.

In this manual of over 300 pages is compressed a great deal of useful information, and the letter-press and illustrations are quite worthy of the high reputation of the publishers. The first seven chapters are devoted to the anatomy and physiology of the human body. Much more of both subjects is given than is afterwards utilized in the text; and this is, I think, a fair test as to how far these technical subjects should be introduced in a popular manual. In another chapter we get a copy of the Rules of the Health Department of New York City, together with the proper method of sterilizing milk for infants, and the best methods of disinfecting houses and clothing after exposure to infectious diseases. One scarcely expects this in a manual on "Prompt Aid to the Injured." The same remark applies to the chapter on hygiene. But leaving out this superfluous material, interesting though it may be, the book is a thoroughly practical one, and well fulfils its object. The chapters on bandaging and dressings; asphyxia and drowning, and poisons and poisonings are particularly good. The last 80 pages of the work is devoted to military surgery and ambulance drill, including the drill regulations of the U.S. Army Hospital Corps, and will be of special interest to volunteer militia surgeons. It is well illustrated, and much of it will be of interest to the general reader, especially in view of the late lamentable breakdown of the U.S. army medical service in Cuba. J. M. E.

Diseases of Women. By J. C. Webster, B.A., M.D., (Edin.), F.R.C.P., Ed. Pp. 688. Illustrated by 241 figures. Edinburgh and London: Young J. Pentland. Montreal: Wm. Drysdale. 1898.

As might be expected in a book written by Dr. Webster, the scientific aspect of each subject treated is well to the fore. The chapters on the anatomy of the female pelvis are well written and clearly illustrated, and may be taken as typical of the whole book. One is rather surprised, however, to find that the subject of ectopic gestation is not included in the work, as it is a question to which the author has paid so much attention from the scientific standpoint. Surely it ought to be included in a work upon gynæcology, when it is the gynæcologist who is usually called upon to treat the condition, and also when the book is particularly intended for students.

A most excellent appendix, devoted to the consideration of the questions of menstruation, evolution, etc., and their relation to one another, is included in the work and contains the latest views concerning them. F. L.

Johns Hopkins Hospital Reports, Vol. VII., Nos. 1 and 2. Report in Gynæcology. Johns Hopkins Press, Baltimore. 1898.

The excellence of the reports published by the above hospital press is so well established that one need say little of the Report in Gynæcology for 1898, except that it is up to the usual standard. It contains two excellent articles; one upon the question of intraperitoneal drainage, judged from a review of 1,700 cases of abdominal section, written by J. G. Clark, M.D., and a second devoted to the consideration of the "Etiology and Structure of True Vaginal Cysts," by J. E. Stokes, M.D. Both articles are well worth reading and will be of service to the practitioner and scientist. F. L.

Society Proceedings.

THE THIRTY-FIRST ANNUAL MEETING OF THE CANADIAN MEDICAL ASSOCIATION.

(Special Correspondence.)

It was fitting that the 31st meeting of this Association should this year be held in the historic city of Quebec, where thirty one years ago it had its birth.

While it is regrettable that the meetings were poorly attended, and the papers as a rule trivial, the session will go on record as one in which good honest work was done in the cause of medical reform in the Dominion. The meetings were held in the Laval University on Aug. 17th, 18th and 19th, and the arrangements were under the able direction of a local committee of which Dr. C. S. Parke was President and Dr. A. Marois, Secretary. To these gentlemen many thanks are due for their unremitting labours to promote the welfare of the meeting and the happiness of the delegates. Unfortunately the *Salle de Promotions* where the sessions were held was up at the top of the building a fact which was of some importance to the heavy-weights of the party.

The meetings were under the presidency of Dr. J. M. Beausoleil, of Montreal, and the following American visitors were present, Drs. Gibney, Valentine and Foster, New York ; Laplace, Philadelphia.

The chairman of the local committee, Dr. Parke welcomed the delegates to Quebec, and Alderman Foley, in the absence of Mayor Parent, also read a formal address of greeting.

The members then adjourned to visit the laboratories and museum of Laval University, and returned at 4.30 p.m., to begin business.

In his presidential address Dr. Beausoleil restricted his remarks to the subject of Interprovincial Registration. Among other things he said :—' It is now almost thirty-one years since our Association sprang into existence in this hospitable and picturesque city of Quebec. Professional brotherhood then received recognition in all quarters of this country. The Canadian medical family was then formed. Now it may march onward to the accomplishment of the object for which it was given life : The promotion of science : the protection of professional interests. A distinguished man, one of the Fathers of Confederation, Dr. Tupper—Sir Charles Tupper—was our first President.

Since that time, a great number of distinguished physicians have succeeded him in this chair. Indeed, I am greatly confused and moved, though profoundly grateful, when I consider the honour done me by calling me to preside at your meetings. There could have been no question of personal merit; your kindness, gentlemen, directed your choice. I am an admirer and sincere friend of my predecessors, and I desire to follow in their footsteps. I ask you, therefore, to allow me for a few moments, to dwell upon that part of our programme, which touches upon: Unity in the Canadian Medical Profession. Gentlemen,—If there is a profession that requires liberty of practice in any country, it is certainly the profession of the physician. French civil law not being recognized in all the Provinces of the Dominion, it is easy to understand why a lawyer from Quebec may not practice his profession in Ontario; but there is only, and can only be, the same anatomy and the same physiology for all the Provinces; the physician is the same everywhere. Why, therefore, this anomaly, that a Canadian physician may not practice in every quarter of the nation's territory? This country, which is so dear to us, can she not nourish her children without dividing them into castes? Why should a practitioner of Ottawa cease to be a practitioner in Hull? Because the British North America Act reserved to the Provincial Parliaments the right, the exclusive right, to legislate in educational matters. Consequently, instead of one Medical Council for the entire nation, we have as many Medical Corporations as there are federated Provinces; and everywhere, of course, as many different legislative enactments. This lack of uniformity has delayed the accomplishment of our professional unity. The considerations that have prevented a great number of physicians from working energetically for the adoption of only one license, which would be recognized throughout all Canada, are:—1. Restrictive legislation granted to each Province by Federal agreement. 2. The fear of destroying Provincial autonomy created by this agreement. To the first objection, I answer that it is true the Federal Parliament cannot legislate in educational matters, belonging to the Provinces, but a question, that interests two or more Provinces, or better still all the Provinces of our Dominion, ceases *ipso facto*, to be a Provincial question: it becomes Federal by the coalition of all the local forces. Who can prevent all the Provinces, united, from obtaining from the Federal Parliament the approbation of their union? Moreover, without adopting this means, the Provinces of Manitoba, Quebec and New Brunswick have already enjoyed reciprocity in regard to their licenses: and nobody cried out at the illegality. To the second objection, we may answer that there is no

question of destroying Provincial autonomy. In fact there is nothing to prevent the maintenance of the local organization whilst, at the same time, allowing it to delegate its powers to some of its members, who would be charged to form a general commission for the whole Dominion. You all know the old saying: "Where there is a will there is a way." Let us understand one another, and it will be easy to make the competent authority understand us. Gentlemen, when we shall have obtained for the whole of British North America a central bureau of admission to study, a board of medical examination for the conferring of a uniform license to practice medicine, then, I say, we shall have come upon an era of progress in the annals of Canadian medicine. Our diploma of practice shall be recognized throughout the whole of the British Empire and will meet with the respect of the scientific world, and the Canadian Medical Association will have deserved well of the country. And your humble President will be happy to find that he had helped, ever so little, in the solution of that great national question: Unity of rights and the freedom of practice of our profession."

A treatise on "The Treatment of Pauper Inebriates," by A. M. Rosebrugh (Toronto), was read by title, and the following committee named to study and report upon the matter, Drs. J. G. Adami, Thorburn and Muir.

Dr. G. Sterling Ryerson, of Toronto, then read a paper on "Monocular Diplopia," a subject which, he said, deserved more attention, being only very inadequately referred to in the text-books. It is much more common, he thought, than was suspected. The overlapping of images was present in monocular astigmatism. He recognized three classes of cases: (1) those dependent upon diseases of the refractive media, such as astigmatisms, facets on the cornea, opacities in the humors, punctures or dislocations of the lens; (2) those with traumatism about the zonule of Zinn, or disease of the ciliary body and iris; partial persistence of pupillary membrane is not often a cause; (3) disorders of the central nervous system. Dr. Ryerson recorded two cases. In the first, which he regarded as hysterical in character, there was diplopia of the right side, associated with right facial neuralgia, tinnitus aurium, augmentation and reduplication of the sounds heard. There was also hyperopic astigmatism. A course of potassium bromide and valerian relieved but did not cure. The second case was one of injury to the left side of the head, the patient remaining unconscious for several days. There was diplopia of the right eye and blurring of the discs. There was probably some protrusion of the posterior portion of the eye forward.

Dr. D. MARCIL then read a paper in French upon "Septic Peritonitis Consecutive to Appendicitis, and its Surgical Treatment." He reviewed the history of operative interference and made the somewhat startling claim that the first operation was done in Paris in 1893. He thought that some patients might be saved by operation even after general peritonitis had set in.

Dr. SMITH then showed pathological specimens, among which was a gall-stone removed from a portion of intestine contained in an umbilical hernia; also a melanotic sarcoma from the leg of a horse The latter in the horse usually occurs along the course of the short saphena vein and oftenest in grey horses.

Dr. FRED. C. VALENTINE, of New York, next read a paper on "The Genito-urinary Instruments Required by the General Practitioner."

Dr. JAMES THORBURN, of Toronto, presented an interesting paper on "The Physician and Life-Insurance." He alluded to the phenomenal growth of insurance-companies in the past two or three years. The subject had, indeed, become so important that a special section had been made for it at the recent meeting of the British Medical Association in Edinburgh. In Canada and England, the amount of the policies was $244,314,448, while in the United States it reached the fabulous sum of $5,183,694,250. When such vast amounts are at stake, the utmost care and skill on the part of the physician should be exacted. Dr. Thorburn very vigorously protested against physicians permitting either Insurance Companies or candidates to influence them in their examinations and reports. He directed the attention of the younger practitioners to the following points in filling out a question-blank: All the questions asked should be answered completely and with discrimination. If a patient has had some disease mentioned, full particulars of this should be given, with dates, duration and probable effects. With reference to the health of relatives, the physician should not answer "don't know," but should take pains by careful questioning to get some idea of the state of the case. A history of pulmonary tuberculosis, syphilis, or insanity in the relatives, demanded particular care in the examination. His whole advice may be summed up in the statement that a full and careful examination should be made in every case, and no part of it slurred over.

Drs. Mullin, Muir, Dickson, Gauthier and Valentine took part in the discussion,

Dr. DICKSON advocated an attempt on the part of insurance companies to bring their question forms into uniformity,

Dr. GAUTHIER made an extremely warm attack on those doctors who indulge in lodge practice, and claimed that they were prostituting the

rofession by accepting fees of $1 and even 50 cents for examinations. Some of them, however, did even worse than that, as there was for instance one society he could name in which the candidate did not have to pay if not accepted. He wanted to know, too, how such things could be stopped when the presidents of colleges and medical councils acted in this very manner and threw out some very broad hints which created quite a sensation. He was in favor of a minimum fee of say $5 being established, even if the insurance applied for be only $1,000.

Second Day, Aug. 18th.

Dr. JAMES BELL, of Montreal, read a paper entitled "A Series of Cases of Calculous Obstruction of the Common Bile-duct, Treated by Incision and Removal of the Calculi." This will be published in the next number of the JOURNAL.

Dr. C. F. MARTIN, of Montreal, exhibited a series of forms in use in the Royal Victoria Hospital of Montreal for the accurate record of the particulars of disease for statistical purposes.

Dr. V. P. GIBNEY, of New York, then read a paper on "The Treatment of Convalescent Club-foot." He remarked that there is no more interesting condition in orthopedics than club-foot and none more difficult to bring to a successful issue, although knowledge of the anatomy and pathology of the part is indispensable to the orthopedist. The reduction of the deformity and the preservation of the induced condition in permanency are two different things, and the latter is often more difficult than the former. Relapes occur from various reasons. Among them is the failure of the surgeon to effect perfect reposition of the parts, or the corrected position may not be maintained for sufficient length of time. Sometimes the neglect of exercising the atrophic muscles or the use of too complicated boots is responsible. In operating Dr. Gibney aims at the production of an over-corrected position, but he thought it unwise to maintain this too long. He felt that it is best to endeavour to enlist the intelligent co-operation of the patient and friends and frankly tell them that the trouble is tedious and much depended on their effort. The child should be taught to walk properly, as this will correct the tendency to pigeon-toes. After operative procedures the foot should be put up in plaster for from three to six months. If there is obstinate projection of the cuboid, and head of the fifth metatarsal, a cuneiform incision should be made in the neck of the os calcis. If the foot still rolled, Dr. Gibney advocated supra-malleolar osteotomy, placing the foot in the position of over-correction. He thought that the surgeon

should himself supervise the construction of all appliances and should occasionally see the patient for months.

Dr. T. G. RODDICK, of Montreal, asked if Dr. Gibney had any method of developing the stunted limb outside of those mentioned in the books, as massage, etc.

Sir WILLIAM HINGSTON said that the cases are often very puzzling, *e.g.*, whether to do tenotomy or osteotomy, what tendons to cut, or which to choose, the open or the subcutaneous method. In his experience subluxation is not common, but he asked Dr. Gibney's experience on this point.

Dr. GIBNEY, in reply, said that he did not know of any other methods to improve a stunted limb, than massage, selected movements, and properly guided exercise. He advised the employment of an experienced masseur. In his experience subluxation is not common.

A discussion on "The Surgical Treatment of Empyema," was opened by Dr. ELDER, of Montreal. He asked: Was any other treatment to be advocated than purely surgical? In his experience children and strong adults in the country sometimes get well spontaneously or upon repeated aspiration. On the whole he thought that the old surgical rule was a good one, that where there is pus the surgeon should cut down and evacuate it. With regard to the operation, resection of one or more ribs is much preferable to simple incision. Only in children is it justifiable to make a simple incision. With regard to the point of incision he thought that the rule of the text-books could not always be followed, but he advised when there is a localized pus collection, incision over the centre of the region and drainage. He recommended also not placing the patient on the sound side, but to draw him somewhat over the edge of the table and operate from below. With regard to the anæsthetic, chloroform or the A. C. E. mixture should be used. As to washing out the cavity most authorities discountenance this now. In slow, prolonged cases in which an external opening occurs spontaneously or there is rupture into a bronchus, should one operate? Dr: Elder thought, as a rule, not, and never in tuberculous cases. In cases in which the general health is obviously suffering, a second lower opening should be made, with an attempt at drainage, except in amyloid cases; or Esländer's operation might be tried.

Sir WM. HINGSTON said that each case is to be treated on its merits, as no two cases are alike. Having been prejudiced for years against the operation of resection, he had been converted to it by experience. He is in the habit of washing out the cavity, using weak carbolic solution or plain boiled water. He thought that pneumonia is

generally the result of empyema, rather than the cause, as is usually taught.

Dr. RODDICK preferred a dependent drain. With regard to washing out the cavity he held a mediate position. If the pus is very fetid, he always washes out. In those cases that hung fire for months he injected into the cavity weak iodine-solution or zinc sulphate, which, by their stimulating action, he thought, hastened a cure. If the pus has broken into the air-passages, he would still operate and would do a radical operation. He preferred a metal tube to a rubber-drain.

Dr. MUIR thought that 99 per cent. of the cases were tuberculous. He preferred operation always in adults, and made his incision as near the backbone and as high up as possible. He also liked a metal drain, using a piece of flanged gas-pipe for the purpose.

Dr. DICKSON said that if he obtained more than twenty ounces of pus on aspiration, he concluded that the case would not be cured by this means alone. He would also wash out in fetid cases.

Dr. W. H. DRUMMOND, of Montreal, then read an interesting historical paper on "The Pioneers of Medicine in the Province of Quebec." (See page 645.)

Dr. ERNEST LAPLACE (Philadelphia) described an ingenious forceps that he had contrived to replace the Murphy button in the operation of intestinal anastomosis. By its use the gut is held in position and can be readily sutured and the instrument be then removed in halves. He stated that the instrument is simple and possesses none of the disadvantages of the Murphy button or Senn's plates.

SURG.-COL. NEILSON, the medical head of the Canadian Militia Service, then addressed the Association, asking for their support and counsel in the reforms that it was proposed to introduce in this service. In consequence of the reorganization of the medical service in the Imperial Army, something of the same kind is needed in the Canadian service, as the present system is antiquated. He had been desired by the Canadian Minister of Militia to bring the matter to the notice of the Association.

Third Day, Aug. 19th.

Dr. T. D. REED addressed the meeting on the British Pharmacopœia. He said that it was periodically revised, but that at the last revision in 1885, there were few changes. In that of 1898, however, 180 medicines are omitted, 80 new remedies are added and 180 changes are made. All of this necessitates the very greatest care and attention on the part of the practitioner, it is manifestly important that there should be absolute uniformity in the writing and filling of prescriptions. He further pointed out that as each province has its

own medical and pharmaceutical associations it was difficult to get concerted action upon the subject, which was a very important one. While the British Pharmacopœia was generally accepted throughout Canada it was not truly authoritative or official, and he thought it time that the Canadian Medical Association as representing the profession of the Dominion should make a pronouncement upon it. By an arrangement between the Montreal Medico-Chirurgical Society and the Province of Quebec Pharmaceutical Association, October 1st, had been agreed upon as the date for the coming into force of the new book and he thought that this date might be well adopted by the Dominion Medical Association.

He therefore moved, seconded by Dr. Mullin:—That "whereas a revised edition of the British Pharmacopœia has been issued containing numerous and important changes, and whereas uncertainty exists as to the date when the British Pharmacopœia, 1898, is to be considered in force: *Resolved*,—That the Canadian Medical Association in annual meeting assembled, recommends that October 1st, 1898, be taken as the date on and after which in the absence of instructions otherwise, physicians' prescriptions should be compounded with the British Pharmacopœia, 1898."

Dr. T. G. Roddick (Montreal) stated that he had received a letter from Dr. D. J. Leech, the Chairman of the British Committee for the Revision of the Pharmacopœia in which he stated that the adoption of the British Pharmacopœia appeared to be an act of grace on the part of the various provinces and Canada as a whole did not act authoritatively in the matter. He thought this should be remedied.

The following committee was appointed to bring the matter to the notice of the Federal authorities with a view to officially appointing the British Pharmacopœia as the standard for the Dominion of Canada;—Drs. T. D. Reed and A. D. Blackader, Montreal; H. B. Small, Ottawa; Marois, Quebec; H. J. Cameron, F. N. G. Starr, and J. A. McCallum, Toronto.

Dr. A. DeMartigny (Montreal) reported two cases of severe furunculosis in which he had used Marmorek's antistreptococcus serum with good effect. He used injections of 20 c.cm. He advocated a further trial.

Dr. C. R. Dickson (Toronto) contributed a paper on Goitre.

He had had an opportunity of seeing some 300 cases of various forms, and had tried most of the usual forms of treatment advocated. Swelling of the thyroid gland was an expression of various pathological conditions. In exophthalmic goitre he had found the best treatment to be absolute rest in bed, a rigid milk diet and calomel. In fibrosis, after ordinary methods had failed, he employed electro-

puncture. When suppuration resulted, he incised the abscess cavity and drained. In cystic cases he inserted an insulated canula, evacuated the contents and then filled up the cyst with saline solution. He then passed in a current of electricity sufficiently strong to destroy the lining membrane, trusting to the resulting inflammation to obliterate the cavity. Removal is only indicated in malignant growths.

Dr. Muir (Truro) in discussion pointed out that exophthalmic goitre was very common in Nova Scotia particularly in young girls of blonde complexion. He thought the overstrain of schooling had something to do with it. He advocated intestinal antisepsis.

Dr. F. X. DeMartigny read an interesting paper on "Genital Prolapse and its Treatment" contributed by Prof. Delaunay, of Paris.

Dr. W. J. Gibson (Belleville) detailed a case in which a bicornate uterus had been mistaken for ectopic gestation.

Dr. D. Campbell Myers (Toronto) read a paper on "Neurasthenia" He confined his remarks to spinal irritation and the relation of neurasthenia to insanity. Spinal irritation was not due to local disease but was psychic. In neurasthenia early treatment was important. He advocated seclusion and a modified Weir Mitchell course.

The Committee on Interprovincial Registration, consisting of representatives of all the provinces excepting British Columbia, reported that they had come to a unanimous decision, and presented the following report, being a basis for a uniform rule for the whole Dominion.

I. There shall be accepted for matriculation: B.A. From any recognised university, or in lieu thereof, first-class or grade A, Provincial certificate in any of the Provinces for teachers' licenses, or an examination of the following branches, which shall be compulsory and conducted by the various councils of the educational departments of each province, viz.:

1. English grammar, composition, literature and rhetoric.

2. Arithmetic, including vulgar and decimal fractions, and extractions of the square and cube root and mensuration.

3. Algebra to the end of quadratic equations.

4. Geometry. First three books of Euclid.

5. Latin. First two books of Virgil's Æneid or three books of Cæsar's Commentaries, translation and grammar.

6. Elementary mechanics of solids and fluids, composing the elements of statics, of dynamics, hydrostatics and elementary chemistry.

7. Canadian and British history, with questions in modern geography.

8. Translation and grammer of any two of the following subjects: Greek, French and German.

9. In lieu of the above we also recommend that any student pre-

senting a certificate after examination from the professors of any standard or approved university in Her Majesty's dominions, of having completed a course of said university, be accepted in any of the provinces of Canada for matriculation and registration.

Fifty per cent. of the marks in every subject shall be required for a pass, and 75 per cent. for honors.

II. Professional education. (a) The curriculum of professional studies shall begin after the passing of the matriculation examinations and registration, and shall comprise a graded course in the regulation branches of four yearly sessions of not less than eight months in each year.

(b) The subjects to be Anatomy, Physiology, Chemistry, Materia Medica, Therapeutics, Practical Anatomy, Histology, Practical Chemistry, Pharmacy, Surgery and Clinical Surgery, Medicine and Clinical Medicine, including Diseases of the Eye, Ear, Throat and Nose, Mental Diseases, Obstetrics, Diseases of Women and Children. Medical Jurisprudence, Toxicology, Hygiene and Pathology, including Bacteriology.

(c) That at least twenty-four months out of the graded four years of eight months each, be required for attendance in hospital practice.

(d) That proof of attendance on not less than six cases of obstetrics and two post-mortem examinations be required.

III. Examinations: (a) All candidates for registration in the various provinces in addition to having filled the foregoing requirements shall be required to undergo examination before examiners to be appointed in each of the Provinces by their representative Councils.

Fifty per cent. shall be required for a pass and 75 per cent. for honors.

IV. Your committee recommend that as soon as the foregoing basis of agreement is ratified by the councils of the various provinces, each council shall endeavor to secure legislation to authorize the carrying out of the foregoing preliminary and professional curriculum and to embody the following to secure a board of examiners for a Dominion qualification, viz:

"That so soon as the various councils of the Dominion shall establish an Examining Board for the Dominion conducted by examiners appointed by the Medical Councils of the several Provinces, their candidates passing a successful examination before said Board and obtaining a certificate to that effect, shall be entitled to registration in the several provinces of the Dominion on payment of the registration fee, providing he is not guilty of infamous or disgraceful conduct in a professional respect."

Your Committee desire to recommend that efforts be made to ascertain the practicability of Federal legislation leading to the estab-

lishment of a central qualification which will place the profession in Canada upon an equal footing with that of Great Britain, and Dr. Roddick be authorized to take the necessary steps in said matter.

We further recommend that this Association shall appoint a Committee who shall consider and recommend the details as to the number of examiners to be appointed, the method of conducting examinations, the fees to be charged, and other necessary details to bring the aforesaid scheme into active operation, which details the officers of this Association shall with the foregoing send to each of the respective councils for approval.

This report was adopted, and the following committee appointed to consider the details of the scheme : Drs. McNeill, P.E.I. ; Muir, N.S. ; Walker, N.B. ; Marcil, Quebec ; Bain, N.W.T. ; McKechnie, B.C. ; Williams, Ontario ; and Dr. Roddick was empowered to pilot the measure through parliament as soon as the various Councils had ratified the measure.

The social part of the meeting was happily conceived, and included a reception at Parent Park, a trip to Grosse Isle, and a drive to Montmorency Falls.

The visit to the Quarantine Station at Grosse Isle was particularly pleasant, and an opportunity afforded to inspect the disinfecting plant which is very complete and effective, reflecting great credit on Dr. Montizambert, the Superintendent. In connection with the alleged desire of the Government to replace Dr. Montizambert by Dr. Guay, a man of his own age, and without practical experience of quarantine matters, the Association passed a unanimous motion to the effect that they appreciated the efficiency of the station and Dr. Montizambert's zeal and skill, and strongly recommended that he be retained in his present position.

The usual complimentary votes of thanks to the officers, the local committee and the entertainers, were passed.

The Auditors, Drs. Dickson and Marois, reported on the Treasurer's books, showing that the balance from last year was $132.52, while the receipts this year were $156, making a total of $288.52, of which a balance of $62.48 still remains.

The following foreign medical men were elected honorary members : Drs. Eugène Delaunay, Massé, Julien, Faveau de Courmelle, Mesnard, Genpin, Paul Lozé, Glantenay and Noury.

It was decided that the next meeting should take place in Toronto and the following officers were elected.

President—Dr. Irving H. Cameron, Toronto.

Vice-Presidents—Prince Edward Island, Dr. J. McLeod, Charlottetown.

Nova Scotia, Dr. Kirkpatrick, Halifax.

New Brunswick, Dr. L. N. Bourque, Moncton.

Quebec, Dr. James Bell, Montreal.

Ontario, Dr. J. A. Williams, Ingersoll.

Manitoba, Dr. R. S. Thomson, Deloraine.

North-west Territories, Dr. Lindsay, Calgary.

British Columbia, Dr. S. J. Tunstal, Vancouver.

General Secretary, Dr. F. N. G. Starr, Toronto.

Treasurer, Dr. H. B. Small, Ottawa.

Local Secretaries, Drs. S. R. Jenkins, P.E I. ; W. G. Putnam, N.S. T. D. Walker, N.B. ; Hon. C. Marcil, Que. ; C. R. Dickson, Ont. ; Geo. Clingen, Man. ; Loise, N.W.T. ; R. Walker, B.C.

Publishing Committee : Drs. A D. Blackader, J. L. Davison, W. A. Young, F. N. G. Starr, H. B. Small.

Committee on By-laws : Drs. C. S. Parke, Wyatt Johnston, Jas Bell, C. R. Dickson, G. S. Ryan, W. W. Dickson J. M. Beausoleil, Starr and Small.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXVII. SEPTEMBER, 1898. No. 9.

THE BRITISH PHARMACOPŒIA.

What is the status of the British Pharmacopœia in Canada? This question has arisen during the discussion which has been provoked by the appearance of a Revised Edition. As the British Pharmacopœia is the legal standard for the preparation of medicines, for the British empire, it should be for the colonies, but Canada does things somewhat independently of the Mother Country. In the Provinces of Quebec and Ontario, the feeling is quite general that the British Pharmacopœia is the authority, but some doubt has arisen owing to the regrettable decision a few years ago of the Dominion analyst, at Ottawa, who, after the examination of certain samples, decided that usage would allow Pharmacists to handle and dispense other medicines than those of the British Pharmacopœia.

The revision of the British Pharmacopœia this year contains so many important, even serious changes, that something should be done to ensure a proper understanding as to what to use in putting up a prescription. The Province of Quebec reached a fairly satisfactory agreement between doctors and pharmacists that the British Pharmacopœia should be considered in force on and after October, 1898. The recent meeting of the Canadian Medical Association afforded an opportunity for obtaining a Dominion pronouncement on the subject, and an agreement as to date for its enforcement was secured. This is well so far as it goes.

A letter from Dr. Leech, chairman of the British Pharmacopœia Committee indicates the fact that in England the idea prevails, that in Canada, the British Pharmacopœia is not held to be authoritative. The action of the Canadian Medical Association in appointing a Committee to endeavour to bring about a Dominion enactment in favour of the British Pharmacopœia was a good move. We trust that the

Committee which is composed of Drs. A. D. Blackader and T. D. Reed, of Montreal; A. Marois, of Quebec; H. B. Small, Ottawa; H. I. Cameron, F. N. G. Starr, and J. N. MacCallum, of Toronto, will be able to stir up our legislators to settle the matter and make the British Pharmacopœia the sole authority for Canada. There are several ex-presidents in parliament, whose aid we think, could be counted on to assist in bringing about so desirable a conclusion.

In the mean time it may be noted that the representative medical body of the Dominion has, by unanimous vote given its "recommendation" of the British Pharmacopœia, of 1898.

VACCINATION IN ENGLAND.

The greatest sensation in medical circles in England has been the Vaccination Act which has at last passed both houses amidst most stormy scenes, threatening indeed the defeat of the Government. Of the merits of the Bill little deserves to be said, and the best that the English profession could hope for it was that it might fail to pass or be withdrawn. Indeed, Lord Lister characterised it as a "Tremendous experiment." For, from making vaccination compulsory, a conscience clause has been introduced, and it was over this clause that the fight raged fiercest. It reads as follows:

"2 (1) No parent or other person shall be liable to any penalty under Section XXIX. or Section XXX. of the Vaccination Act of 1867 if, within four months from the birth of the child, he satisfies two justices or a stipendiary or metropolitan police magistrate in petty sessions that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers to the vaccination officer for the district a certificate by such justices or magistrate of such conscientious objection.

"(2) This section shall come into operation on the passing of this Act, but in its application to a child born before the passing of this Act there shall be substituted for the period of four months from the birth of the child the period of four months from the passing of this Act."

Moreover, as the Act does not provide for revaccination, it practically means that for the next five years vaccination is purely a voluntary matter.

Mr. W. T. Stead, with his usual velocity, has come to judgment on this subject. He says:

"The second great victory which was gained last month in Britain was the defeat of the Government over the Vaccination Bill. This may seem a small thing to many, especially to those who take a super-

ficial view of the matter. In reality it is a victory of the greatest importance, for it is a victory which almost for the first time definitely and formally extends the area within which conscience is recognised as king. * * * * * * * * * *

The latest concession to the sovereignty of the individual conscience was due to the same readiness on the part of individuals to go to prison rather than obey a law which they believed to be unjust. This concession, forced from the Government under threat of imminent defeat, extends the same principle to another sphere. By the clause introduced by Mr. Balfour into the Vaccination Act, and accepted by the House of Commons, any parent who satisfies the Justices of the Peace that he has conscientious scruples which forbid him to assent to the vaccination of his children is to be exempt from compulsion. This concession, bitterly assailed by the medical police, who as always are dominated by the fixed idea that the health of the community can only be secured by the sacrifice of the liberties of the subject, marks a great advance, the full significance of which is yet but dimly appreciated. This clause will be fiercely assailed in years to come. But if the advocates of liberty or conscience in matters of medicine as well as matters of theology are up to their work, they will succeed in making it the starting point for a whole series of similar concessions.'

The reference to the "medical police" is somewhat undeserved.

With regard to scruples, conscientious or otherwise, whatever relation they may bear to matters of theology, they cannot be considered in medical matters. Such are not questions of conscience or even opinion, but are matters of fact. The value of systematic vaccination as a preventative of small-pox or as a means of mitigating the attack one would have thought would have been set at rest by the report of the recent British Commission on the subject. To all fair minds this was conclusive in favour of vaccination. The principle is also endorsed by both the Royal College of Physicians and the Royal College of Surgeons, so that the medical profession of England is overwhelmingly in its favour, to say nothing of that inother civilized countries. The resolution of the former body is as follows :

"The Royal College of Physicians having learnt that certain changes are likely to be made in the laws relating to vaccination, think it their duty to reiterate their conviction that vaccination, properly performed and duly repeated, is the only known preventive of small-pox."

In view of this testimony the Marquis of Ailesbury might well say that they objected to abrogating the work of Jenner at the bidding of a few faddists when all the nations of the world were following his teaching.

The doctrine of the divine right of a nation to misgovern itself which is such a fetish to many minds, is only a monster begotten of this latter day democracy. Law and order is only possible when there is judicious control of people's actions. "The greatest good to the greatest number" is the maxim to be observed in matters of public health as well as in other directions, and if people will not think and are deliberately careless, other people must think for them. And who better than the doctors who are the best qualified to judge on matters of health and disease? When disease breaks out we isolate people and disinfect houses and exercise other restrictions. Is this not interference with the liberty of the subject? If we have the right to do this after disease breaks out, we certainly have the right to prevent people from deliberately running into infection, or neglecting ordinary measures of precaution. Disease and death is too serious a matter to be left in the charge of ignorance or carelessness.

The only hope is that the government will carry a Revaccination Bill next session on its promises.

In the meantime England has taken a retrograde step, and must go on record as subjecting knowledge to ignorance and presumption It is a pity that such matters should be the sport of political parties.

GESTA MEDICORUM.

"QUICQUID AGUNT MEDICI NOSTRI FARRAGO LIBELLI."

Prof. v. Leyden is the new Dean of the University of Berlin.

The next meeting of the British Medical Association is to be held in Portsmouth.

The American Public Health Association meets this year in Ottawa, on the 27th, 28th, 29th and 30th of September.

Dr. Victor Vaughan, Professor in the University of Michigan, has been unfortunate enough to contract yellow fever while at the seat of war in Cuba.

Dr. Fleischer, Professor of Internal Medicine at Erlanger, is appointed to the Chair of Medical Propædeutics and History of Medicine in the same university.

Edinburgh University is to have an Institution of Public Health. This building is presented by Mr. John Usher, who had previously evinced his generosity by completing the endowment of the Chair of Public Health which was initiated by the late Mr. A. L. Bruce.

Dr. Alexander Mitchell Stalker, Physician to the Dundee Royal Infirmary, has been appointed Professor of Medicine in the Dundee

University College ; Dr. David MacEwan, Surgeon to the same Infirmary, Professor of Surgery ; Dr. Charles Templeman, Lecturer in Forensic Medicine and Public Health ; and Dr. David Fraser Harris, Lecturer in Physiology and assistant to Prof. Pettigrew in the University of St. Andrews.

The seventeenth Annual Announcement of the New York Post-Graduate Medical School and Hospital, University of the State of New York, for 1898-99 has just been issued. It shows that 523 practitioners of medicine have attended its courses during the past year. They came from the various States of the Union and the Dominion of Canada. There were ten physicians from foreign countries, two of these being from India and one from Japan. Only 96 were from the State of New York.

Dr. Wm. Pepper died suddenly from angina pectoris on July 28th. He was scarcely 55 years of age. He graduated from the University of Pennsylvania in 1864. In 1868 he was made lecturer in Morbid Anatomy in his alma mater ; lecturer on Clinical Medicine 1870, and professor of the same in 1876. In 1881 he became Professor of the Theory and Practice of Medicine. He was well-known as the editor of " A System of Medicine," and " An American Text-Book of the Theory and Practice of Medicine." In 1871 he founded the *Medical Times*. He was a voluminous writer on Medical subjects. He was also a generous benefactor of his University, and gave it the William Pepper Laboratory of Clinical Medicine in memory of his father.

The thirty-first annual meeting of the Canadian Medical Association washeld in Laval University, Quebec, on August 17th, 18th and 19th. The detailed proceedings are given in another place.

It was regrettable that only a small proportion of the members thought it advisable to attend, some 78 only being registered ; this probably being accountable for the mediocrity of the majority of the papers presented. Thus the enthusiam which members beget was absent. Still in regard to the business transactions it was a notable meeting and will go on record as consummating a most important advance—Interprovincial Registration. Quebec is an ideal city to visit, and great thanks are due our Quebec *confrères* for the hospitable way in which they entertained the delegates, the visit to the Quarantine Station at Grosse Isle being a particularly happy thought. The social part of the meeting certainly was a great success.

At the Convocation of Edinburgh University, held in connection with the visit of the British Medical Association to that city, the following distinguished visitors received the honorary degree of LL.D. :

Dr. Henry Bowditch, Professor of Physiology, Harvard University, U.S.A.; Sir William Broadbent, Bart., F.R.S.; Dr. Lauder Brunton, F.R.S.; Dr. E. Doyen, Paris; Dr. David Ferrier, F.R.S., Professor of Neurology, King's College, London; Dr. Joseph Forster, Professor of Hygiene, University of Strassburg, Germany; M. le Comte de Franqueville, Member of the Institute of France; Dr. Karl Gerhardt, Professor of Clinical Medicine, University of Berlin, Germany; Mr. Richard B. Haldane, Q.C., M.P.; Mr. Jonathan Hutchinson, F.R.S.; Dr. Theodor Kocher, Professor of Surgery, University of Berne, Switzerland; Dr. August Martin, Professor of Gynæcology, University of Berlin, Germany; Dr. Johann Mikulicz, Professor of Surgery, University of Breslau, Germany; Dr. Ottavio Morisani, Professor of Midwifery, University of Naples, Italy; Dr. William Osler, Professor of Medicine, University of Baltimore, U.S.A; Dr. William Playfair, Professor of Obstetric Medicine, King's College, London; Dr. Roddick, Professor of Surgery, McGill University, Montreal, Canada, President of British Medical Association, 1897; Dr. Seigmund Rosentein, Professor of Clinical Medicine, University of Leyden, Holland; Dr, Hermann Snellen, Professor of Ophthalmology, University of Utrecht, Holland; and Sir Richard Thorne, K.C.B., F.R.S., Chief Medical Officer, Local Government Board, London.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Atlas of Legal Medicine. By Dr. E. von Hofmann. Authorized Translation from the German. Edited by Frederick Peterson, M.D., assisted by Aloysius O. J. Kelly, M.D. Philadelphia, W. B. Saunders, 1898.

Atlas and Abstract of Diseases of the Larynx. By Dr. L. Grunwald, of Munich. Authorized Translation from the German. Edited by Charles P. Greyson, M.D. Philadelphia, W. B. Saunders, 1898.

Sir Benjamin Collins Brodie. By Timothy Holmes, M.A., F.R.C.S. London, T. Fisher Unwin. 1898.

Conservative Gynæcology and Electro-Therapeutics. By G. Betton Massey, M.D. Third edition. Philadelphia, New York, Chicago, F. A. Davis Co., 1898.

Yellow Fever. Clinical Notes by Just Touatre, M.D. (Paris). Translated from the French by Charles Chassaignac, M.D. New Orleans, New Orleans Medical and Surgical Journal, 1898.

The Johns Hopkins Hospital Reports, Report on Pathology. Baltimore, The Johns Hopkins Press, 1898.

An American Text-Book of Diseases of Children. Edited by Louis Starr, M.D. Assisted by Thompson S. Westcott, M.D. Second edition, revised. Philadelphia, W. B. Saunders, 1898.

An American Text-Book of Gynæcology, Medical and Surgical for Practitioners and Students. Edited by J. M. Baldy, M.D. Second edition, revised. Philadelphia, W. B. Saunders, 1898.

A Text-Book of Pathogenic Bacteria for Students of Medicine and Physicians, By Joseph McFarland, M.D. Second edition. Philadelphia, W. B. Saunders, 1898.

A Manual of Modern Surgery. By John Chalmers DaCosta, M.D. Philadelphia, W. B. Saunders, 1898.

The Retrospect of Medicine. Edited by James Braithwaite, M.D. Vol. 117. Jan.-June, 1898.

On Cardiac Failure and its Treatment. By Alexander Morison, M.D., F.R.C.P. London, The Rebman Publishing Company, Ltd., 1897.

Dwelling Houses, their Construction and Arrangements. By W. H. Corfield, M.A., M.D., F.R.C.P.L. Fourth edition. London, H. K. Lewis, 1898.

The Tuberculin Test in Cervical Adenitis. By Edward O. Otis, M.D. Reprinted from the Medical News, July, 1898.

The Principal Poisonous plants of the United States. By V. K. Chesnut. Washington, Government Printing Office, 1898.

Renal Calculus. By J. H. Musser, M.D. Reprinted from the Philadelphia Medical Journal, 1898.

The Essential of the Art of Medicine. By J. H. Musser, M.D. Reprinted from the Philadelphia Medical Journal, 1898.

The Diagnostic Importance of Fever in Late Syphilis. By J. H. Musser, M.D. Reprinted from the University Medical Magazine, October, 1897.

Remarks at the Presentation of Candidates for the Degree of Doctor of Medicine at the Commencement of the Johns Hopkins University, June 14th, 1898. Reprinted from the Johns Hopkins Hospital Bulletin, July, 1898.

The Prevention of Diseases now preying on the Medical Profession. By Leartus Connor, A.M., M.D. Reprinted from the Bulletin of American Academy of Medicine. Vol. III, No. 9.

Diseases of the Lachrymal Passages—Their Causes and Management. By Leartus Connor, A.M., M.D. Reprinted from the Journal of the American Medical Association, July, 1898.

The Employment of Solutions of Toluidin-Blue as Collyria, and as a Stain for Corneal Abrasions and Ulcers. By Clarence A. Veasey, M.D. Reprinted from the Philadelphia Medical Journal, 1898.

Bains d'Air Chaud Sec. By Dr. P. V. Faucher. Reprinted from La Revue Médicale.

The Treatment of Choleraic Diarrhœa. Lambert Pharmacal Co.

Some Points in the Diagnosis of Morphia Addiction. By Stephen Lett, M.D. Reprinted from the Canada Lancet, August, 1898.

Hospitals and Sanatoria for Consumption Abroad. By Edward O. Otis, M.D. Reprinted from the Boston Medicol and Surgical Journal, 1898.

Kryofine. By Eugene Back. Reprinted from the New England Medical Monthly, May, 1898.

Detection of Fœtal Heart Murmur in Gravida with Report of a Case. By J. H. Hall, M.D. Reprinted from Archives of Pediatrics.

Aortic Stenosis with Mitral Regurgitation, A Clinical Lecture. By J. H. Hall M.D. Reprinted from the Colorado Medical Journal, January, 1898.

Displacement of the Heart in Lung Diseases. By J. H. Hall, M.D. Reprinted from the Medical Fortnightly, Feb. 1898.

Notes on Malaria in Connection with Meteorological Conditions at Sierra Leone. By Surgeon-Major E. M. Wilson, C.M.G. London, H. K. Lewis, 1898.

Neurotic Eczema. By L. Duncan Buckley, A.M., M.D. Reprinted from the American Medical Association, April, 1898.

A Case of Bilateral Syphilitic Ulceration of the Palpebral Conjunctiva. By Clarence A. Veasey, M.D. Reprinted from the International Medical Magazine April, 1898.

A Preliminary Report on a Method of Overcoming High Resistance in Crooke's Tubes, A Possible Step Toward Maximum Radiance. By. W. W. Graves, M.D. Reprinted from the American X-Ray Journal, April, 1898.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXVII. OCTOBER, 1898. No. 10.

Original Communications.

A SERIES OF CASES OF CALCULOUS OBSTRUCTION OF THE COMMON BILE DUCT, TREATED BY INCISION AND REMOVAL OF THE CALCULI.[1]

BY

JAMES BELL, M.D.,

Professor of Clinical Surgery, McGill University, Surgeon to the Royal Victoria Hospital and Consulting Surgeon to the Montreal General Hospital.

It is safe to say that in no department of surgery has greater progress been made in recent years than in the treatment of gall-stone disease by operation upon the gall-bladder and ducts. Lives are now saved and health restored by operations which are followed by a very low death rate, and which have this advantage over many other valuable surgical procedures, that they restore the health completely and leave the patient free from deformity or loss of function. The first successful cholecystotomy was done by Mr. Lawson Tait, in August, 1879, and the first attempt to remove stones from the common duct was made, (also by Mr. Tait), by crushing in July, 1884.[2] Later Mr. Knowsley Thornton operated by breaking up the stones with a needle passed through the walls of the duct ("needling"), and forcing the fragments out into the duodenum. The first successful choledochotomy was performed by Curvoisier in January, 1891.[3] To-day cholecystostomy is a common operation, frequently performed and generally with the most satisfactory results, and in ordinary cases the procedure is almost devoid of danger. Incision of the common duct for the removal of calculi, which has now almost entirely superseded the cruder operation of "crushing" and "needling," is, of course, a much more difficult and serious operation, and is generally called for

[1] Read at the meeting of the Canadian Medical Association, Quebec, August, 1898.

[2] Lancet, Vol. II., 1885.

[3] A. W. Mayo Robson Hunterian Lectures, 1897.

in conditions of the patient which are much more unfavourable for operation. Nevertheless, the mortality rate is low, and the results in the successful cases are brilliant. I have purposely refrained from using in the title of this communication the uncouth and cumbrous terms by which these operations are described, (choledochotomy, choledocholithotomy, choledochoduodenotomy, choledochoduodenolithotomy, etc.), as no one of them could be properly used for all of the six cases which form the subject matter of the paper. Of these six cases five were females, each of whom had borne a large number of children. The ages of the patients ranged from 33 to 61 years. In two there was but a solitary stone, in three there were stones in the gall-bladder, as well as in the common duct, in four, there was obliteration of the cystic duct and a contracted gall-bladder, which contained no bile, and in two, a large stone was impacted in the ampulla of the duct within the duodenum, (diverticulum of Vater), and was removed through an incision in the duodenum (choledochoduodenotomy). There was but one death in the six cases, from pneumonia on the sixth day after operation, and one patient was submitted to a second operation upon the duct, five and one-half months after the first operation.

Case I.—E. B., a gentleman, æt. 52, had his first attack of pain in the right side of the abdomen while travelling by rail in the summer of 1892. It was severe, lasted all evening and was followed by jaundice, which passed off in a day or two. Three similar attacks followed, one in three months, another in the winter of 1893, and the third in February, 1894, with intervals of good health. On the 25th of January, 1895, the fifth attack began, more insidiously than any of the previous ones. From this time there were frequent attacks with persistent and steadily increasing jaundice, drowsiness, anorexia, itching of the skin, and loss of weight, from 225 lbs. to 140 lbs. in eleven months and a half,—(from January 25th, 1895, till he came under my observation, January, 13th, 1896). Operation was performed on the 14th of January, 1896. There was much adhesion of the colon, duodenum and omentum to the liver. The gall-bladder was contracted and empty. A stone, about the size of a playing marble, was discovered impacted in the ampulla of the duct, within the duodenum. It was removed through an incision made along the line of the duct and obliquely across the duodenum at its posterior border—choledochoduodenotomy. The wound in the duodenum was closed by fine silk sutures, two or three carried through all the coats of the bowel, and then a double row of Lembert sutures. A rubber drainage tube was carried down to the bottom of the cavity and surrounded by iodoform gauze packing. There was no escape of bile or duodenal contents,

and the patient made an excellent recovery. Within a few weeks he had regained the 80 lbs. which he had lost in the year preceding the operation, and he is still, I believe, in the enjoyment of perfect health.

Case II.—Mrs. S., æt. 56, the mother of a large family, was admitted to the Royal Victoria Hospital on the 16th February, 1897, deeply jaundiced and complaining of pain and tenderness in the epigastrium. A long series of attacks of crampy pain in the epigastrium (evidently biliary colic) had begun about twenty years prior to her admission to hospital and had continued for ten years with considerable frequency and steadily increasing severity. At the end of ten years a large, painful, tender tumour developed in the epigastrium, and she was confined to bed with chills, flushes, pain and weakness, (acute cholecystitis?) At the end of six months, the tumour began to diminish in size and gradually disappeared altogether, and at the same time she became deeply jaundiced. The jaundice lasted about six months. She remained fairly well then for four or five years, with the exception of frequent "weak turns." Then she had typhoid fever, after which she remained well again until one year before coming under observation, when the pain returned with swelling of the limbs, high-coloured urine, and general malaise, which lasted six weeks. Two months before admission, she was again seized with pain in the epigastrium. The attacks were frequent and severe, the urine became high-coloured and jaundice developed. Two weeks before admission the jaundice became very marked and steadily increased. She had also been losing flesh rapidly during the last two months. On admission there was extreme jaundice, with bile stained urine and colourless stools. The liver was not enlarged but there was a tender point midway between the xiphoid cartilage and the umbilicus and just to the right of the middle line. There was great prostration which was attributed to cholæmia. This patient was operated upon on the 23rd of February. On opening the abdomen there was much adhesion of the omentum to the lower surface of the liver. The gall-bladder was contracted and contained twelve small facetted stones which were removed with the finger through an incision made into the least prominent part. There was no bile. Two smallish stones were removed in fragments through an incision on the dilated common duct and a large one, about the size of a marble, which lay in the ampulla of the duct, within the duodenum was pushed backwards and removed through the same incision. The aggregate weight of the fifteen stones was 3.1 grammes. The incision in the common duct was closed by sutures as in the previous case, but it was found impossible to either completely close the wound in the gall-bladder or

bring it up to the parietal peritoneum. There was considerable escape of bile from the incision in the duct during the operation owing to the difficulty of dislodging the large stone from the ampulla of the duct. The bile was carefully mopped out and a large drainage tube carried down to the border of the cavity, and well-packed round with iodoform gauze. There was a moderate escape of bile from the tube, and the patient seemed to do fairly well for four days, when she developed a right-sided pneumonia and died on the first of March, six days after operation. There was no autopsy, but during the six days following operation there was neither abdominal pain nor distension nor any symptom to indicate local disturbance. This patient was cholæmic, weak and miserable at the time of operation and took ether badly, having the air passages full of mucus throughout, and to this I am inclined to attribute the pneumonia which was the cause of death.

Case III.—Mrs. C., æt. 47, the mother of 11 children, the youngest six years of age, was admitted to the Royal Victoria Hospital on the 13th of August, 1897, deeply jaundiced and complaining of pain just to the right of the epigastrium. She had had her first attack of biliary colic in 1881, and from that date to 1894, she had had an attack about every two years. In 1894, she had a very severe attack, the pain lasting 12 days. In the next two years she had an attack each year. From the first, each attack was accompanied and followed by jaundice. From May, 1897, she had had several attacks and the jaundice had never entirely disappeared. During all this time she had colorless stools and very dark urine. The last attack began on the 26th of July, and lasted three days. From that time until the date of operation, August 17th, the jaundice had steadily increased. She had lost much flesh, and the rounded border of the liver could be distinctly felt through the flaccid abdominal wall. She was very deeply jaundiced and had a systolic apex heart murmur. The other organs were normal. At the operation, there were few adhesions, the gall-bladder was shrunken and empty, and a large stone was readily detected in the common duct about half an inch above the duodenum. It was fixed in this situation, or at least was not easily movable. An incision was made over the stone, which was removed, and the incision closed by fine silk sutures. Five sutures were inserted through all the coats and a double row of Lembert sutures was applied over this again. The stone weighed 4 grammes. A drainage tube was inserted down to the bottom of the cavity and packed around with iodoform gauze. There was no escape of bile and recovery was uneventful. A bile stained discharge appeared in the dressing, but I believe it to

have been simply bile stained serum. This patient was discharged on the 1st of October, perfectly well.

Case IV.—Mrs. C., æt. 61, a stout woman, the mother of 14 children, was admitted to the Royal Victoria Hospital on the 13th of October, 1897, deeply jaundiced, and with two large carbuncles on the right side of the abdomen, on a line with the umbilicus. Her symptoms had begun in the winter of 1894, after a fall, in which she struck her right side against the edge of a barn door. Periodic attacks of pain and tenderness in the right epigastrium occurred about twice in the year, but they were not accompanied by jaundice, until August 10th, 1897, when the last attack began. This was attended with severe and continued pain, constant vomiting and a sense of fulness about the stomach, and jaundice, which grew gradually deeper and deeper until she came to hospital. The carbuncles were first attended to, on the 14th of October, and on the 4th of November, the abdomen was opened. The liver was enlarged, the gall-bladder was shrunken and contained five calculi, but no bile. The cystic duct was obliterated and the common duct was dilated and contained a fairly large stone which could be moved back and forth along the duct. The stone was removed through an incision in the middle third of the duct and the incision sutured in the usual way. This stone was facetted, as were the five others removed from the shrunken gall-bladder. The aggregate weight of the stones was 4.7 grammes. The cavity was drained by a tube passed down to the incision in the common duct, and surrounded by iodoform gauze packing. This patient made an uneventful recovery and was discharged on the 20th of December, with the wound perfectly healed.

[Within the past ten days I have heard of the patient through her son. His report is as follows: For some time after going home she remained quite well but in January she began to complain of pain in the abdomen. On the 7th of May, she became definitely insane with delusions on the subject of religion, etc. At no time has she had any jaundice, her color is good, and the stools and urine are normal.]

Case V.—Mrs. K., æt. 49, the mother of 12 children, the youngest born 14 years ago, was admitted to the Royal Victoria Hospital on the 5th of February, 1898, with a history of two month's illness. On the 8th of December, 1897, she was seized with moderately severe pain in the epigastrium, which prevented her from straightening herself up. This was soon followed by jaundice. The jaundice persisted and the attacks recurred about twice a week until she came to hospital. She had lost a good deal of flesh and had been chilly and feverish. On admission she was deeply jaundiced: the stools were colorless and

the urine very dark. Operation was performed on the 10th of February. The duodenum was firmly adherent to the contracted gall-bladder and was wounded in separating them. The wound was closed by silk sutures—first through the whole thickness of the bowel and then a double row of Lembert sutures. A large stone weighing 3.25 grammes was found in the common duct which was much dilated. It was freely movable in the duct and was removed through a longitudinal incision which was sutured with fine silk in the usual way. A drainage tube was inserted and surrounded by iodoform gauze packing. The dressings next morning showed evidence of the escape of bile, and again on the following morning. From this time there was more or less escape of bile into the dressing for four or five weeks. In the meantime the jaundice had entirely disappeared and the stools and urine were normal in color and appearance, and the wound was almost completely healed. On the 24th of April, it was noticed that the skin was slightly yellow again. On the 6th of May, she had a severe attack of pain with increase in the jaundice. From this time on she developed symptoms of obstruction in the common duct and the abdomen was re-opened on the 21st of July, by an incision about an inch inside of the previous one. The duct was easily reached, although the duodenum was again wounded in separating it from the under surface of the liver. The wound was immediately closed by sutures as before. A movable stone was found in the common duct and removed through a longitudinal incision, which was closed by sutures of fine silk as in the previous operation. This stone weighed .5 grammes. There was nothing in the appearance of the duct to indicate that it had been previously opened or otherwise interfered with. The cavity was drained and packed as in the previous operation. There was some escape of bile the following morning. This soon ceased, however, and in four days the urine and stools were normal and the yellowness had almost entirely disappeared from the skin and conjunctivæ. This patient continues to make excellent progress towards recovery. This second operation was much easier than the first, and except at the lowermost part of the wound the operation field was entirely cut off from the general peritoneal cavity by adhesions.

Case VI.—Mrs. B., æt. 33, the mother of six children, was admitted to the Royal Victoria Hospital on the 6th of May, 1898, suffering from jaundice and recurring attacks of pain in the right hypochrondrium. Her first symptoms, of this kind, had occurred two years previously. In three months more she had a series of mild attacks and then remained well for a year, when she had another severe

attack. This was in June, 1897. She was again free from attacks of pain until four weeks prior to admission, when she began to have a series of attacks accompanied by jaundice which varied in intensity, from time to time, but never disappeared. The temperature ranged from 98° F. to 101° F., the liver was slightly enlarged and its lower border was palpable, and there was a trace of albumen in the urine. Operation was performed on the 12th of May. On opening the abdomen the colon and stomach were adherent to the liver, but the gall-bladder and ducts were exposed without much difficulty. The gall-bladder was distended and tense and the common duct much dilated. A stone was found firmly impacted in the ampulla, within the duodenum. It was removed through an incision over the end of the duct into the duodenum, which was immediately closed by silk sutures, first through all the tissues, and then a double row of Lembert sutures. This stone was facetted. The base of the distended gall-bladder was next aspirated and three ounces of greyish thick pus withdrawn which gave sterile cultures. Six facetted stones were removed from the gall-bladder and one from the cystic duct—eight in all, weighing 7.3 grammes. The cystic duct was obliterated beyond the impacted stone. The gall-bladder was attached to the peritoneum and a drainage tube inserted into it. A strip of iodoform gauze was passed down along the under surface of the gall-bladder and cystic duct, to the line of incision in the duodenum, at the end of the common duct. The remainder of the abdominal wound was closed. The patient made an excellent recovery and was discharged quite well on the 5th of July.

In estimating the value of a surgical procedure, we have to consider: (1) The conditions which call for operation and the prognosis in these conditions, under other methods of treatment, or no treatment at all. (2) The gravity of the operative procedure in itself, and (3) the results which we may reasonably expect to attain by operation?

(1) *The conditions calling for operation.*—In jaundice due to mechanical obstruction by a stone, or by several stones in the common bile duct, there is but one ground for hope, outside of operation, and that is the expulsion of the stone by natural methods, or its escape into a neighbouring viscus, (stomach or colon), by adhesion and ulceration. Medicinal treatment is useless and nothing short of direct interference can avail to remove the stones. If the obstruction persists, cholæmia sooner or later proves fatal, (directly or indirectly), or perforation and escape of contents into the general peritoneal cavity occurs and sets up a fatal peritonitis, or cancer develops as a result of the long continued irritation of the passages and carries off the patient. The only question then would seem to be, how long one should wait in

obstructive jaundice before resorting to operation? This is a most difficult question to decide, because on the one hand we cannot fix any period at which we can say that the possibilities of nature have been exhausted, and on the other, it is obviously undesirable to allow patients to suffer unnecessarily for weeks or months before affording the relief which must sooner or later be given. In general terms, it may be said that no rule can be laid down and each case must be taken upon its own merits. On this point I have had, in my own experience, one very instructive demonstration.

[A young woman, aged 23 years, had her first attack of biliary colic on the 1st of April, 1897. Repeated attacks followed, and on the 22nd of June she became jaundiced. The jaundice persisted and attacks of pain, gradually increasing in severity, occurred at short intervals until the day after her admission to the hospital (August 19th, 1897), when they ceased altogether. I operated on the 25th August, only to find distinctive evidence that the stone had passed through the duct.]

(2) *The gravity of the operation.*—The operation, although often difficult, is not a serious one, as is shown by statistics, and no doubt the death rate, in this as in all the newer operative procedures, will be much reduced in the future. The number of choledochotomies heretofore reported is too limited to furnish statistics of any special value, but Mr. A. W. Mayo Robson[1] gives the death rate, as calculated from three series of collected cases, as well as from his own individual cases and those of two or three other surgeons, as ranging from 16 per cent. to 37.8 per cent. In my own cases. (seven operations upon six patients), there was only one death, from pneumonia on the sixth day after operation. The dangers are, shock, from undue prolongation of the operation, peritoneal infection by the contents of the bile passages and hæmorrhage. Wounds of viscera in separating adhesions are accidents common to all abdominal operations. It is believed by many surgeons that long continued jaundice predisposes to hæmorrhage by altering the composition of the blood. My limited personal experience in these cases and others in which I have removed the stones by other means than through incision of the duct, has not confirmed this observation.

Method of operating.—The methods of different operators differ only in unimportant details. My operations have been carried out in the following manner: A vertical incision is made in the abdominal wall from the costal margin over the centre of the rectus muscle, down to about the umbilicus. The fibres of the muscle are separated and the peritoneum opened. Through this wound the parts are explored and the conditions determined as far as possible. A second incision is then made from the upper end of the first one along the costal

[1] Diseases of the gall-bladder and bile duct.

margin towards the ensiform cartilage, for one inch, or perhaps two inches. There is generally much adhesion of omentum, colon, duodenum or stomach to the under surface of the liver, and the separation of these adhesions is in most cases the most important and difficult part of the operation. The large thin-walled vessels of the omentum are easly torn and may give rise to very troublesome hæmorrhage and greatly prolong and complicate the operation. It is at this point, too, that the hollow viscera are likely to be wounded. When these adhesions are separated there is no difficulty in discovering the dilated common bile duct at the bottom of the cavity, extending obliquely inwards from the gall-bladder, (which is usually shrunken and contracted), to the head of the pancreas. It is, of course, indistinguishably bound up in cellular tissue with the portal vein and hepatic artery,—the whole appearing as a rounded rope-like mass, usually about two inches in length. The field of operation is now limited to a cavity, bounded internally by the stomach and duodenum, below by the colon, above by the liver and externally by the right lobe of the liver and the parietes of the abdomen: and with a few sterilized gauze pads the general peritoneal cavity is completely cut off. With the first two fingers of the left hand, under the rope-like mass above referred to, and the thumb apposed anteriorly the duct, which lies in front, can be explored from end to end and any stone easily detected. The stone is then made to project against the anterior wall of the duct by the fingers beneath, and the thumb compresses the duct on its proximal side to prevent the gush of bile which follows the relief of the obstruction. A longitudinal incision is made in the duct and the stone or stones evacuated. I generally retain the fingers and thumb in this position until I have passed three or four, or more, silk sutures through the edges of the incision, which are tied by my assistant. I can then relax my hold upon the duct and insert a number of Lembert sutures, carefully approximating the peritoneal surfaces. In this way neither bile nor blood escapes. A drainage tube is passed down to the bottom of the cavity near the line of suture and surrounded by a tubular packing of iodoform gauze to ensure the safety of the peritoneal cavity in case of the sutures in the duct giving way. It is sometimes said that it is unnecessary to close the wound in the duct, but the great gush of pent up bile which always escapes though the incision, if allowed to do so, leads me to think that closure of the wound is, at least, a wise precaution. I also look upon provision for drainage as a wise precaution—if not a necessary one, for in spite of the greatest care there may be some escape of bile from the wound in the duct which may, as pointed out by

Riedel, be temporarily obstructed by blood clot after operation. In three of my cases there was some escape of bile a few days after operation, and I am of the opinion that to depend upon the suture of the duct with so much confidence as to close the abdominal wound completely would surely lead, sometimes at least, to disaster.

Finally, the vertical portion of the abdominal wound is closed by sutures and the drainage tube brought out through the obliquely transverse portion.

A SERIES OF NINE ABDOMINAL PAN-HYSTERECTOMIES PERFORMED IN ONE YEAR FOR UTERINE FIBROMYOMA.[1]

BY

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As nine patients have undergone abdomino-vaginal hysterectomy for uterine fibroid disease at my hands from January, 1897, to January, 1898, only one of whom died, the following analysis of the cases may prove of interest.

The average age of the patients was 40 years and 6 months, the youngest patient being 32 and the oldest 57 years of age. In only two had the climacteric been reached and in these two it had occurred two and thirteen years respectively before operation. The age at which these women first menstruated averaged thirteen years and eleven months, the extremes being twelve and seventeen.

Sterility.—Six of the patients were married, and of these, three were absolutely sterile, one had had one miscarriage but no full-time children; one had had one full-time child and no miscarriages; and one had carried seven children to full-time and had miscarried once. Of those who were absolutely sterile, one uterus contained an interstitial tumour, while the other two patients had multi-nodular tumours scattered all through the uterus. The patient who had miscarried once had two interstitial fibroids, while the uterus of the woman who had carried seven children to full time was the seat of general fibroid enlargement and one small sub-mucous nodule. These women had been married for from two to twenty-seven years. While the number is too small upon which to form any opinion, it is seen that in this series the sterility was most marked when the tumours were interstitial, but it is quite likely that the presence of these growths played a very small part in the production of this sterility.

Symptoms.—Headache was a marked symptom in cases 2, 3, and 4, but in case 3 was due to defective vision and was cured by the patient wearing proper glasses.

Abdominal enlargement was the chief complaint in cases 3, 5, 6, 8 and 9, although it was plainly evident upon inspection in all.

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[1] Read before the Medical Society of Northern New York, October 11th, 1898.

Pressure symptoms in the form of pain in the pelvis and thighs and obstruction to the circulation in the limbs were noticed in all but Nos. 1 and 9. It is strange that none were felt in case 9 as the tumour was a large one, but their absence may be accounted for by the fact that the growth was entirely abdominal, resting on the brim of the pelvis and was so firm as not to sink down into any of the hollows which contain the nerves and vessels. In No. 6, the tumour and uterus encroached to such an extent upon the right side of the pelvis that the vessels of that side were pressed upon, resulting in œdema and swelling of that leg.

In cases 4, 8, and 9, advice was sought chiefly on account of flooding, the tumour being entirely sub-mucous in Nos. 4 and 9, but more deeply situated in the uterine muscular tissue in No. 8. In all of the other cases, the growth was either sub-serous (as in the majority) or interstitial. Menstruation was both too frequent and too profuse in cases 1, 2, 4, 5, 7, and 9, while in Nos. 3 and 6, the flow was very scanty, and in both cases the tumour was entirely of the sub-serous variety.

Where the patient suffered from dysmenorrhœa, the pain began with the flow and lasted during the period in six cases. In No. 7, the pain began a few days before the flow and lasted until four days after the latter had ceased. This patient had a multilocular cyst of the left ovary, which, I think, accounted for the pre and post-menstrual pain, as it is not often that the pain comes on some days before the flow unless the appendages are diseased. The situation of the tumour in this series of cases made no difference in the degree of pain felt by the patient.

Operation.—In the first four cases, the operation was performed as follows: After thoroughly curetting the uterine cavity and closing the cervix with a running catgut suture, the abdomen was opened by the usual incision in the middle line, and both broad ligaments were tied off in sections with stout catgut ligatures, the ligature including the ovarian and uterine arteries, and were divided. Peritoneal flaps were dissected off the uterus in front and behind, the anterior flap including the bladder. The vagina was then opened and its attachments to the cervix were divided with scissors, and the whole mass removed. Anterior and posterior peritoneal flaps were united to the anterior and posterior vaginal walls respectively so as to cover over the raw surfaces and also to prevent undue shortening of the vagina, after which the top of the vagina was closed in by a running suture of catgut. The abdominal cavity was then wiped dry and the incision in the abdominal wall closed by three rows of sutures. These con-

sisted of a continuous suture of fine catgut for the peritoneum and one row of interrupted silkworm gut sutures for the fascia of the rectus and another similar row for the skin.

In the 6th, 7th and 8th cases, after curetting the uterine cavity and closing the cervix with catgut, the vagino-cervical attachments were separated, the uterus pushed well to each side and the space thus formed was packed with gauze. The abdomen was then opened and the ovarian vessels were ligated and divided. An anterior flap of peritoneum was then formed and the broad ligaments opened up in such a way as to permit of the ligature of each uterine artery *per visu*. The posterior flap of peritoneum was then formed and the division of the broad ligaments completed. As the vaginal attachments had been previously divided from below, the uterus and tumour were quite free and could be lifted out of the abdominal cavity. All bleeding points were then secured by fine catgut ligatures and the two vaginal walls united. The peritoneal flaps were then sutured together so as to cover in all of the raw surface including the ligatures which had been applied to the ovarian and uterine arteries. The only point of difference in the operation in the 5th and 9th cases is that the whole operation was performed through the abdomen as the cervices were too high up in the vagina to allow of the combined operation.

Complications.—The operation was complicated in four cases. In No. 1 the right ovary formed a cystic tumour, containing ten ounces of a dark grumous fluid, composed largely of extravasated blood. This was densely adherent to its corresponding tube, the upper part of the rectum and to the posterior surface of the uterine fibroid. These adhesions were separated and the cyst was removed, after which the tumour and uterus were likewise removed by total hysterectomy and the abdominal cavity wiped dry. The incision was closed by three rows of sutures without any drainage being employed.

In case No. 3 the complication was caused by the patient having undergone a previous abdominal section, as a result of which the omentum was firmly adherent to the old cicatrix. This adhesion was separated with some difficulty and the operation of hysterectomy proceeded with.

The seventh patient of the series had a multilocular cyst of one ovary, in addition to the uterine fibroid. This was the size of a large cocoanut, and was densely adherent to the surrounding intestines, but was eventually removed before proceeding with the hysterectomy.

Mrs. M., first case (No. 5) is deserving of a somewhat fuller description. She was a widow, 57 years of age, complaining of weakness

and pain in the back and left groin. These symptoms had been present for the last three years and, at times, were so severe as to confine the patient to bed. She has lost flesh rather rapidly during the past year, and she attributes this to her appetite having been very poor. Even since her symptoms commenced three years ago, she has had a profuse thin yellowish watery discharge, but it has been neither hæmorrhagic nor malodorous. Menstruation began at fourteen years of age, recurred regularly every four weeks, lasting for four days, and was always accompanied by severe pain. She was never pregnant. Menstruation ceased entirely thirteen years ago, at which time she had a submucous fibroid removed. On making a vaginal examination, a multiparous cervix was felt high up and to the right in the vagina. The centre and whole of the left side of the pelvis were filled with a hard mass. Bimanually, the mass was felt to be the size of an adult head and to be firmly fixed in the pelvis. It was rounded and well defined on the right side, but it gradually became more and more indistinct to the external hand on the left side, pressure over the upper part of the mass on the side causing intense pain, which lasted for nearly 24 hours. The diagnosis was a uterine fibroid tumour with chronic pelvic peritonitis, the tenderness on the left side being probably caused by the inclusion of the ovary of that side in adhesions.

At the operation, the uterine cavity was curetted, the instrument bringing away a quantity of broken down purulent material. On opening the abdomen, the cæcum, descending colon and rectum were found to be adherent to the tumour, a mass the size of a small orange lying between the descending colon, the left broad ligament and rectum. After separating the cæcum from the tumour, work was begun on the left side, the adhesions being so dense that their division had to be begun with the knife. While separating the colon from the mass below it, a quantity of intensely fœtid pus welled up from what, on further dissection, proved to be an old pyosalpinx, which had ruptured on the posterior surface where it was closely adherent to the rectum. This abscess sac (the left tube and ovary) was shelled out of its bed of adhesions, tied off and removed. All of the pus was carefully wiped up as soon as it appeared at the orifice of the rupture, the general peritoneal cavity being protected by a large pad. The tumour and uterus were now comparatively free, so both broad ligaments were tied off and divided, together with the uterine artery on each side. An interior and posterior flap of peritoneum were formed, after which the vaginal attachments were divided and the whole mass removed. The raw surface was packed with iodoform gauze, one end

being thrust into the vagina for drainage and to allow of its removal. The vesical flap was sewn to the rectum and to the peritoneum at the upper margin of the raw surface on the posterior pelvic wall, after which the whole abdominal cavity was well swabbed out and a glass drainage tube inserted, the incision being hurriedly closed with two rows of sutures as the patient was in such a weak condition. A small gauze wick was introduced into the tube to assist drainage, but the abdominal cavity was not flushed out with salines as this would only have tended to spread any pus which had escaped from the abscess and not been removed by the swabs. The tube was removed on the third day, as it remained quite dry after the first 48 hours. The orifice of the track of the tube was kept open by a light plug of gauze for a few days until it had apparently granulated up. The vaginal packing was removed daily for one week, at the end of which time dressing was discontinued as there was no discharge. As far as pulse and temperature went, the patient made a good convalescence, the pulse only once going above 100 after the first 24 hours, it touching 102 beats per minute on the second day. The temperature was still better, not reaching 100°F. once after operation, although it stood at 102°F. the day before. Notwithstanding this practically non-febrile chart, the pulse and temperature being taken every two hours, on the eleventh day as the patient was turning herself in bed, a great quantity of pus gushed up from the track of the tube, leaving a cavity which only closed up after over three weeks careful attention, the cavity being washed out daily with hydrogen peroxide, a small rubber drainage tube inserted and the opening covered with gauze. This shows how pus may form and only indicate its presence by slight rises of pulse and temperature and also without occasioning the slightest degree of pain, there being absolutely none in this case. A culture from the contents of the ruptured tube, taken at the time of operation but before the tube had been removed from the abdomen, showed that the only germ present in the pus was the B. coli. Unfortunately, no culture was taken from the pus which escaped from the tract of the drainage tube, so that it is impossible to say just what germ was present. It is well-known that the colon bacillus will cause suppuration but is not a very virulent germ, so that it is probable that the bottom of the drainage tube track was infected by some of these bacilli which had penetrated the wall of the bowel where it was weakened by the separation of the adhesions. This patient made a good recovery eventually. She has been seen within the last four weeks and is quite well, there being no evidence of weakness at the site of the drainage tube.

The only other case worthy of detailed mention is No. 8, this being the only one followed by a fatal termination. This patient was a strong multiparous woman, thirty-one years of age, who had a submucous fibroid the size of an adult head. Beyond the fact that she suffered from intense dysmenorrhœa and menorrhagœa, the only point in the history worthy of note is the extreme rapidity of growth of the tumour. In March, 1894, the patient's pelvic contents were very carefully examined under anæsthesia, at which examination the uterus was felt to be ante-flexed but not enlarged. Early in 1897, the patient married, and in June of that year consulted me for pelvic pain. On making a local examination, the uterus was found to be the seat of a fibroid the size of a very large cocoanut. Intra-uterine galvanism was given a fair trial, but its only effect was to cause such great pain that both the patient and her husband insisted upon an operation being performed. On October 23rd, 1897, abdomino-vaginal pan-hysterectomy was performed in my private hospital. There was absolutely no complication and the operation was over in sixty-five minutes. The patient's recovery was smooth and uneventful until the night of the 31st, her pulse, respiration and temperature being well represented by the accompanying chart of the average for the whole nine cases. She had been feeling very well all day, laughing and chatting with her husband and parents. At 11.30 p.m. she woke up complaining of pain in the left iliac region. Her bowels had moved during the day, but the nurse now emptied them by an enema and gave her ʒss of brandy as she felt weak. This made such an improvement that the patient went to sleep; the pulse being regular and strong. At 1.30 a.m. she again woke up and said she had a "queer sensation." Her pulse was irregular and weak and her hands cold She was given more brandy, but it did her no good, and I was sent for. Before I could arrive, however, she suddenly sat up in bed, vomited a little thin watery fluid and fell back again, only breathing three or four times after I reached the bedside at 1.40 a.m. Unfortunately no post-mortem examination was allowed, but I have no doubt in the least but that the cause of death was pulmonary embolism. There had been no evidence of a cardiac disease to be discovered although the patient's heart had been carefully examined on several occasions during the five or six years that she had been under my care. Septicæmia was out of the question, as there was not the slightest symptom of it from the day of the operation. Slipping of a ligature, followed by internal hæmorrhage, may also be put to one side as a cause, as it was eight full days after the operation by which time the pelvic vessels have become effectually plugged and there was

neither the pallor nor the sighing respiration which are seen in internal hæmorrhage. I have little doubt but that the pain in the left side of the pelvis complained of at 11.30 was caused by the temporary arrest of an embolism in one of the pelvic vessels. This became dislodged and subsequently found its way into one of the pulmonary vessels and so caused death.

After Treatment.—In these nine cases, opium was only given to three patients, each of whom received ten minims of Battley's solution hypodermically once on the night after the operation.

Only two of the patients required post-operative use of the catheter, viz., in Nos. 3 and 8, who required it for 48 and 72 hours respectively.

Stimulation after operation was resorted to in the majority of cases not as a routine measure, but because each patient required it.

The following table will show the particulars as to kind and quantity of stimulant employed:

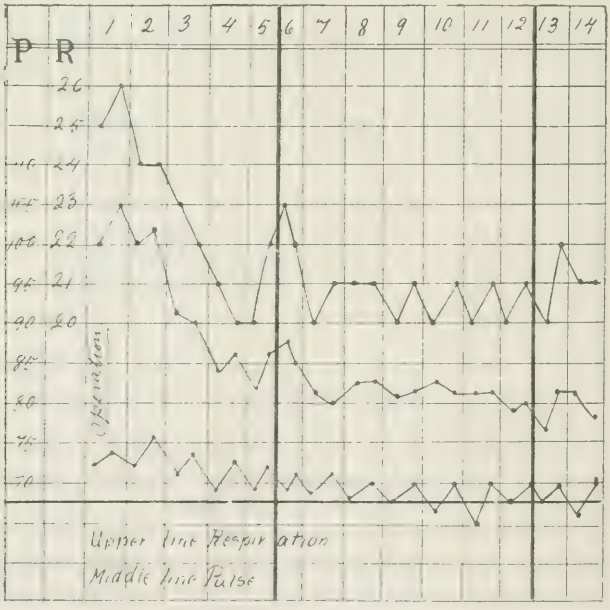
Case.	Kind and Quantity of Stimulant Employed.
1	Strychnine gr. $\frac{1}{30}$ q. 6 h. for 1st 8 days.
2	" " $\frac{1}{40}$ t. i. d. for 1st 21 days. Brandy ℥ss in nutritive, enemata q. 4 h. for 2 days.
3	Brandy ℥ss in nutritive enemata q. 4 h. for 2 days and champagne ℥ss p. r. n. for vomiting for one day.
4	Brandy as above. Also 3 saline enemata during 1st night.
5	" " " Also strychnine gr. $\frac{1}{40}$ q. 4 h. for 10 days. Also 2 saline enemata during the 1st 8 hours.
7	Strychnia gr. $\frac{1}{60}$ t. i. d. for 2 days.
8	" " $\frac{1}{40}$ t. i. d. for 2 days. One saline enema as soon as removed from the table.
9	Strychnia gr. $\frac{1}{40}$ q. 4 h. for 10 days. One saline enema just after operation, and ℥ss-℥ss brandy or whiskey as required for several days after operation on account of a weak heart.

From the accompanying chart which represents the average of the morning and evening pulse, respiration and temperature of nine cases for eight days and eight cases for the remaining six days, it will be seen that the temperature reached the highest point on the second day after operation, when it ran up to 100.2° F., steadily declining from here to normal, which was reached on the eighth day. The pulse

and respiration were the most rapid on the night after the operation, reaching 105 and 26 respectively. They then steadily fell until the fifth day when they both again quickened, taking three days to reach 88 and 23 respectively and again fall to the point from which the second rise started, viz., 82 and 20, in the vicinity of which they remained until the patients were discharged.

A few of these patients returned to hospital after dismissal, complaining of the usual symptoms of the menopause, and were given ovarian extract, gr. v., t. i. d., after meals. All showed considerable amelioration of their symptoms for the first few weeks but the improvement was only temporary.

Although the one death brings up the mortality in the above series to 11.11 per cent., it will be acknowledged, I think, that that death was entirely unpreventable, and the combined results show that abdominal hysterectomy for moderate sized fibroid tumours of the uterus is not an operation which ought to be followed by a high rate of mortality when proper precautions are taken not only at the time of operation, but in the preparation and after treatment of the patient.



Case Reports.

"OBITER SCRIPTA" VI.

(Casual notes from the Medical Clinic Royal Victoria Hospital.)

On Some Interesting Cases of Enteric Fever.

BY

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AND

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During the progress of enteric fever there is undoubtedly no symptom nor sign upon which more stress is laid than the course of the temperature curve, and yet it is remarkable how under certain conditions one may observe unusual and sudden elevations of temperature with as sudden remissions, when there is perhaps but little that is tangible to account for the abnormal type of the disease. The present epidemic, it would seem, has been more particularly characterized by the irregular types of fever that have developed, occurring often with chills and sweatings—the sudoral form as described by Jaccoud—and it has been moreover an interesting and not uncommon feature that from time to time in the otherwise quite ordinary and typical course of the disease a distinctly irregular type of fever has presented itself. The facts concerning a few of the cases are briefly summarized below, while some observations on the relapses in certain conditions have likewise been added.

CASE I. (Vide Chart No. I.)

Enteric fever running a prolonged course Chills. profuse sweating—Angio-neurotic œdema—Remarkable elevations of temperature without complications.

A man, 30 years of age, entered the hospital on the 5th day of the disease with the usual symptoms of typhoid fever, the pulse being 90 per minute, the temperature 104°F. Under the influence of baths, the temperature for the time being was readily reduced, rising, however, to a maximum of 102° or 103° each day during the first ten days following admission. Suddenly, on the 15th day of the disease,

the temperature rose to 105° and patient suffered from a severe rigor followed by sweating. No further symptoms developed, however, and for the subsequent week the temperature progressively decreased. On the 23rd and 24th days of the disease chills again recurred with profuse sweating, though careful examination failed to disclose any complications. On the 26th and 27th days of the disease the temperature remained below 99.5 and the patient was apparently convalescing rapidly, the pulse remained below 90 beats per minute, and his general condition seemed excellent. On the following day, again his temperature rose suddenly, and in 48 hours reached 104.2°. Rigors and sweating supervened, and patient complained of severe pain in the right hypochondrium, this condition lasting and repeating itself for several days. Careful and repeated examinations of affected region were made but failed to reveal either pleurisy, pneumonia or any signs of hepatic complications. The temperature again subsided, but two days later very large swellings suddenly appeared over the left shoulder and left hip joint. These were remarkably red and tense, the overlying skin was glistening, and the slightest touch seemed exquisitely painful. In fact over the hip joint particularly, it seemed as though a subcutaneous abscess were developing and that operation would be necessary. Within two days, however, the condition had entirely subsided and there was neither heat, redness, swelling nor pain. From that time on to the 32nd day of the fever the patient seemed to be gradually convalescing, and by the 51st day the evening temperature attained the normal, and it seemed again as though the patient would be assured of complete convalescence. But in this we were again disappointed, for within 72 hours the temperature reached 104.2°, though the patient seemed otherwise to show no evidence of complication. The fever subsided as rapidly as it had appeared and within a week was again normal. Once more, on the 64th day of the disease, the temperature rose from 98.2° to 105° within a few hours, rigors and sweating reappeared, only to be followed in two days again by a normal temperature, and patient has since been quite comfortable in every respect.

This case is particularly interesting as showing the uncommon condition of angio-neurotic œdema occurring with enteric fever and further, the presence of remarkable elevations of temperature due, not to any complication nor to a typical relapse, but rather to what we may regard as analogous to the temporary septic intoxications which occur in the puerperal state. The fact that the pulse in the interval of these high temperatures remained slow and the general condition of the patient excellent, would seem to indicate that no

serious complication has arisen and the prognosis would be correspondingly good, however, alarming the chills and high temperature might be.

The appended chart No. I., will illustrate the temperature curve from the 47th to the 67th day of the disease.

CASE II. (Vide Chart II.)

Enteric fever with progressive amelioration for three weeks, then recurring chills and sweating with sudden elevations of temperature.—Recovery without complications.

A young man, 17 years of age, developed after three weeks of a favourable course of typhoid with rapid defervescence, sudden rigors and sweating, the temperature curve reaching 105.5 though the pulse remained at 100 beats per minute.

As will be seen from the accompanying chart, within six days of the 4th week of the disease there were three distinct rigors, the temperature rising on two occasions to 105.5° and yet an examination of the chart will show that the average pulse rate was about 90, only twice or three times reaching 104. Apart from the discomfort necessarily occasioned by the rigors, the general condition of the patient was, if anything, better than previously. The tongue remained moist, the abdomen not distended and the only symptom unfavourable was the continuance of a rather profuse diarrhœa without, however, the presence of any blood. The slowness of the pulse with the absence of any signs of complications enabled us with justice to give a comparatively favourable prognosis, and, as will be seen from the chart the temperature again after 48 hours reached the normal without the use of antipyretics. Two days later another rigor supervened with a similar general condition and for about one week the temperature remained lower, the patient's general condition improving. During all this time the food was progressively increased, though, of course, as yet no solids were allowed. Suddenly again, on the 38th day of the disease a severe rigor took place followed on the next day by a subnormal temperature from which time onward the temperature remained below the red line throughout convalescence.

This case is of particular interest as illustrating what has already been observed by German writers, viz., that in typhoid fever with severe relapses in which chills occur, the convalescence is apt to set in suddenly rather than by a slowly progressing defervescence.

CASE III. (Vide Chart No. III.)

Enteric fever, two relapses.—The first relapse occurring one week after subsidence of fever and preceded two days previously by a rigor.

In the present instance there is little of interest beyond what is mentioned in the above epitome. The presence of multiple relapses has not been uncommon in our recent series though the case is unique in that a rigor preceded the relapse by two days and the temperature, which rose to 101° after the chill, fell again to normal before actual relapse appeared.

CASE IV.

Enteric fever running the usual course.—Delirium five days after temperature attained the normal.—Relapse three days later.

The subject of the above attack entered the ward on the sixth day of the disease and for three weeks his fever ran a moderate course before it reached the normal. For five days he seemed assured of convalescence when suddenly delirium set in and patient endeavoured to get out of bed. The relapse, which set in three days later, was treated by baths and patient made a satisfactory recovery, no further cerebral symptoms ensuing after first attack.

CASE V. (Vide Chart No. IV.)

Patient with enteric fever of ambulatory type entering hospital with normal temperature followed by relapse.

This case is of no little interest for the victim afflicted entered hospital with practically normal temperature, complaining of some slight indisposition which had existed for several weeks previously, in which pains in the epigastrium and diarrhœa had been prominent features. The condition for the first day was looked upon as one of slight gastro-intestinal indisposition. To the surprise of the Resident, however, the student in charge ventured on the diagnosis of typhoid fever and the Widal serum test was forthwith tried, giving to everybody's astonishment a decided and positive reaction. Two days later the temperature rose and as will be seen from the chart ran a more or less ordinary course to convalescence. Obviously the patient had been suffering from ambulatory enteric fever and the symptoms were so slight as to obviate the necessity of seeking for medical advice until the weakness obliged him to enter the hospital. (Vide chart No. IV).

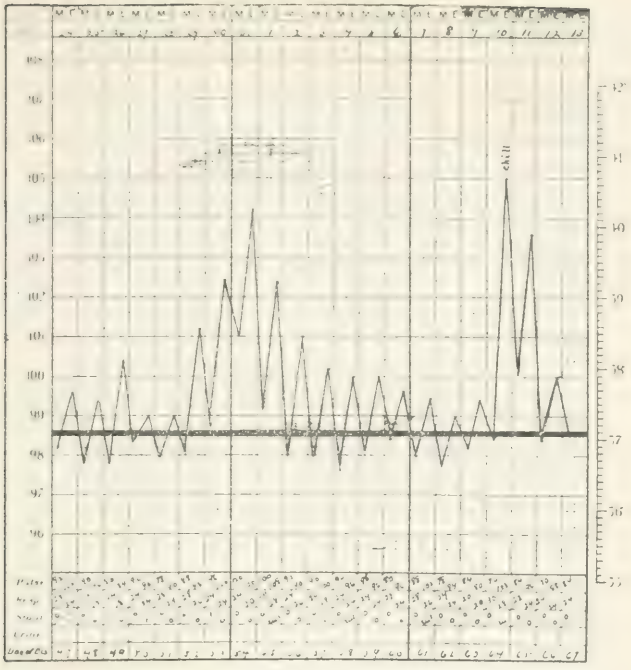

CHART I.

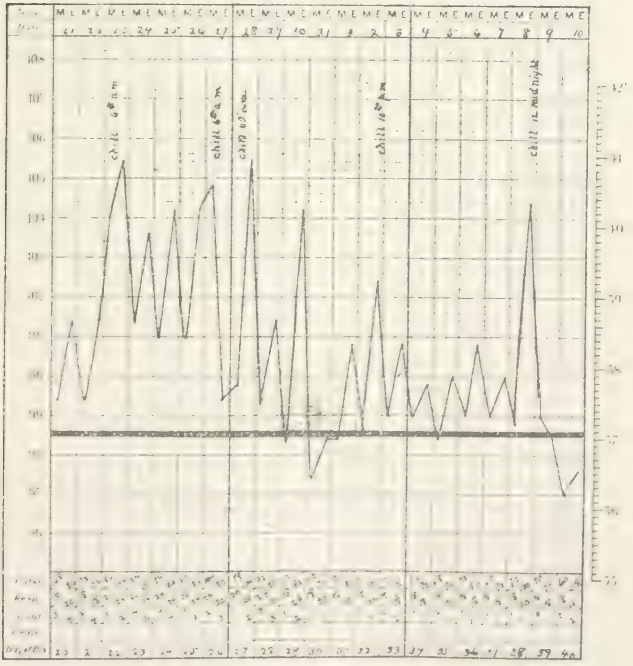

CHART II.

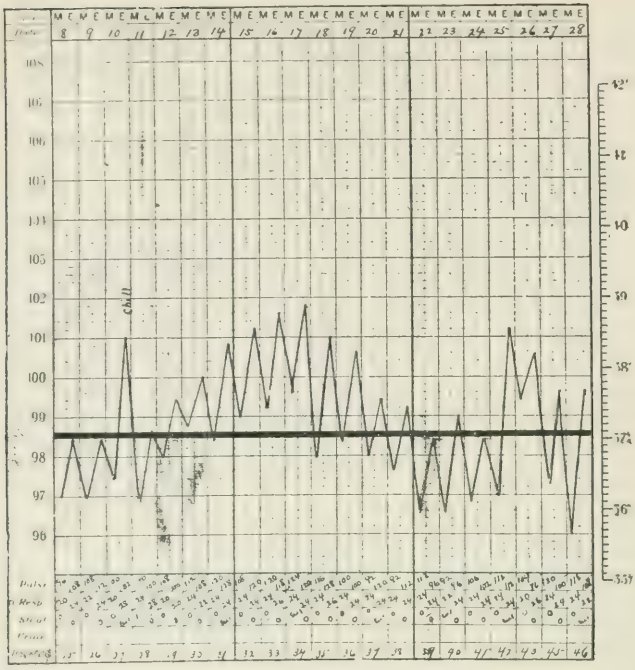

CHART III.

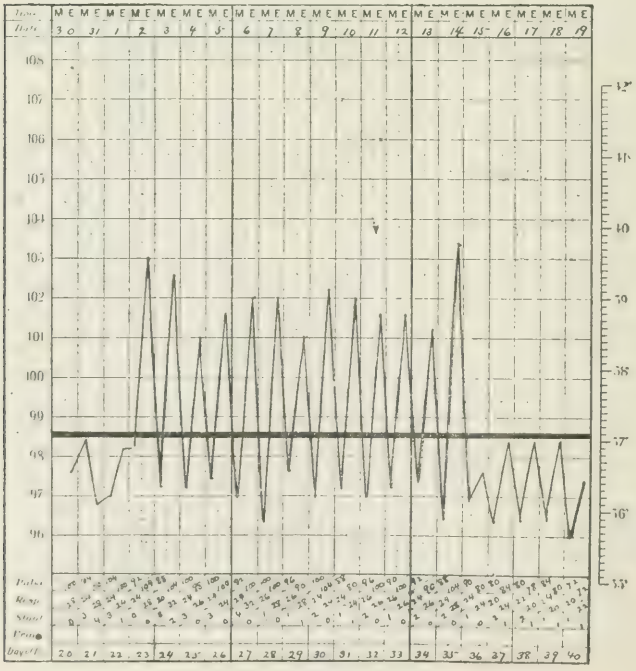

CHART IV.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Prognosis of Cardiac Disease in its Bearing upon Life Insurance.

Sir William T. Gairdner, M.D., K.C.B., and others. "Prognosis of cardiac disease in its bearing upon life insurance—A discussion in the British Medical Association, 1898."—*The British Medical Journal*, Sept. 17, 1898.

In opening the discussion of this important subject, Sir William referred to two cases of cardiac disease of long standing, and to one of the rarest forms of cardiac disease recorded. In the two of the first group an active life was spent—the murmurs showing the signs of disease disappeared. Death resulted in one case at the advanced age of 65 or so from muscular atrophy, while the other is living yet.

In that, the rarest of cardiac cases recorded, Sir William describes an auricular tumour attached to the right auricle, but not implicating the valvular orifice. It acted, however, as a ball valve, descending into the tricuspid orifice. The patient lived for 10 years after the signs were first detected. He complained of but little referable to the heart during this time, and died of pneumonia.

In dealing with the subject proper, the author includes the difficulties of the insurance medical officer under three heads, expressed in the following questions :

What amount of "loading" are we entitled to put upon any given policy ?

Under what circumstances are we justified in rejecting the life totally and absolutely without taking it twice into consideration ?

Under what circumstances are we justified in saying, "you are not insurable just now, but perhaps if you go on for two or three years and do not suffer you will be insurable" ?

The accurate answers to these questions are not forthcoming since the data concerning them are not sufficiently broad or accurate. Insurance without medical examination was mentioned as having occurred in an applicant who subsequently died with aortic aneurism.

After these somewhat preliminary remarks, Sir William stated that the object of his paper was to see whether any kind of *via media* could be got at whereby examiners would be able to deal with cases of extra risk in life insurance on better principles than at present. Eight divisions of his subject are made, and are taken up in the following order: Pericardial lesions, organic lesions without functional disturbance, senile degenerations, non-insurable organic lesions, functional disorders, bradycardia and tachycardia, the heart of chorea, large and small hearts, and angina and pseudo angina.

Under pericardial lesions, Sir William discusses the question whether a well ascertained case of acute pericarditis could ever undergo healing, so as to leave nothing behind that would effect an insurance risk. The usual reply is in the negative, but the author is of the opinion, and agrees with Dr. Kirkes, that such a case may terminate without derangement of the cardiac function, the pericardium being smooth and the heart function normal.

Under the second division, viz., organic lesion without functional disturbance, Sir William says there is no doubt that the principle, and the only just principle on which we can deal with these cases, as at present advised, is the principle of delay.

Those applicants presenting such lesions as are included under the term senile degenerations are to be dealt with by absolute rejection, or by an addition so heavy as to make it doubtful if the proposer will complete the transaction. They may be insured for a particular term of life.

The fourth division of this subject, viz., non-insurable organic lesions, requires no discussion.

Functional disorders.—Under this division Sir William gave as a typical example of such cases well marked irregularity of rhythm, bradycardia and tachycardia. The tobacco heart and the senile heart are included, and a preference expressed in favour of applicants presenting tachycardia.

The murmurs in heart of chorea are regarded by the author as organic in origin, and the inference that they are not organic based upon the observation that they disappear, is regarded as unsafe.

On discussing the subject from the standpoint of the size of the heart, Sir William said that the muscularity of the patient must be considered as well as all the characters of the urine, especially in relation to manifest cardiac hypertrophy.

Angina and pseudo-angina.—No specific directions could be given by the writer for the assessment of these applicants who were the subject of this condition. Sir William could not make any absolute

distinction between angina and pseudo-angina, and expressed himself doubtful that anybody else could do so.

In the discussion that ensued, the following opinions among others were expressed :

1. A very slow pulse was not of such danger to life as Sir William Gairdner had suggested.

2. The wall should be considered as much, if not more, than the valves of the heart. Hospital statistics were misleading since they dealt with the poor and debilitated cases.

3. The normal apex beat was insisted upon as a criterion of a normal heart.

4. Definite conclusions in certain cardiac cases, notably the mitral form, should not be arrived at earlier than twelve months after the first observation.

The Diagnosis of Nephritis without Albuminuria.

ARTHUR R. EDWARDS, M.D. "The diagnosis of nephritis without albuminuria."—*The American Journal of the Medical Sciences*, October, 1898.

At the close of the discussion of this interesting subject the author summarizes the chief considerations and conclusions of his paper as follows :

1. Carefully repeated routine chemical and microscopical examination of the urine every 24 hours usually, but not invariably, detects acute and chronic nephritis.

2. The diagnosis of the albuminuric and non-albuminuric types of the nephritides is aided by searching examination of other viscera and parts, *e.g.*, by a disturbance of cardio-vascular changes, retinal involvement, etc.

3. These visceral or somatic changes usually present in nephritis may be lacking in concrete instances, or be capable of other or diverse interpretation as atheroma, etc.

4. The urinary findings most essential to the diagnosis of nephritis may be lacking, as many other signs and symptoms of minor dignity.

5. Nephritis may be unattended by albuminuria. Such nephritis is usually interstitial in type.

6. While certain instances of non-albuminuric nephritis correspond to the type described by Dr. D. D. Stewart, yet non-albuminuric nephritis may not exactly correspond to the said type since acute nephritis, chronic parenchymatous nephritis, and chronic interstitial nephritis may occasionally occur without albuminuria.

7. Casts should always be searched for : they are more constantly found than is albumin, yet they seem, in certain instances, to betoken

renal degeneration rather than inflammation. They are not invariable in nephritis, nor are they invariably nephritic.

8. Future clinical caution and pathological examinations will probably increase the number of cases of non-albuminuric renal inflammations of acute, subacute and chronic types.

9. Non-albuminuric nephritis is of a special importance in life insurance and kindred examinations, and in practice, since prophylactic measures may be instituted, and the prognosis obviously influenced.

Infections in Pulmonary Tuberculosis.

Robt. J. M. Buchanan, M.D, "Observations on pure and mixed infections in pulmonary tuberculosis in relation to prognosis—with an analysis of twenty-one cases."—*The Liverpool Medico-Chirurgical Journal*, July, 1898.

The demonstration of the presence of the bacillus of tuberculosis in sputum implies the existence of tuberculosis.

The number of the bacilli cannot be regarded in any way as indicating the gravity of the disease, since it is so variable, within short periods in the same case.

Spore formation is of much greater importance, and Dr. Buchanan says "in the acutest forms spores are always present."

The progress of most pathogenic organisms in producing lesions is greatly accelerated by association with other organisms. Observation of clinical cases and animal experiment confirm this. "Mixed infections" then are important in considering "prognosis." The author's observations bear this out in pulmonary tuberculosis; and he is convinced "that the great source of danger in pulmonary tuberculosis resides in the association of the tubercle bacillus with other organisms."

In this article, which he wishes to be regarded as the report of a preliminary step in the investigation of mixed infections in tuberculosis, Dr. Buchanan describes the method adopted and gives the conclusions drawn from the examination of twenty-one cases.

The chief point in the technique is that which aims at eliminating those organisms found so numerously in mouths of all patients. The mouth and teeth are thoroughly cleaned with a brush and antiseptic lotions, and with as little delay as possible the expectoration is received into a clean bottle and examined by the Ziehl-Neelsen method.

Without entering into the details of the cases reported, it may be said that sputum showing pure infection was from patients whose disease was slow, with tendency toward quiescence.

The cases of mixed infections showed no tendency to improve, and the general symptoms were more severe. When the secondary infection may arise is impossible to state. It may be early; it may be late.

W. F. Hamilton.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Pilonidal Sinus.

EDITORIAL. *The Philadelphia Medical Journal*, October 15th, 1896.

The occurrence of a suppurating sinus containing hair and located in the coccygeal region is by no means very uncommon. In some cases the sinus becomes clogged and an abscess forms. That the real cause of the suppuration is not always recognised is shown by the fact that cases often come to our clinics in which the sinus has been opened and packed, in some instances several times, without removing the little tuft or coil of hair which gives rise to the trouble. Probably a slight congenital dimple in which perspiration and filth accumulate, and an abundant hairy growth exists in some cases as predisposing cause. Strange to say this condition is not mentioned in most text-books on surgery, or even in the large systems of surgery and special works on diseases of the rectum, and when mentioned the names applied are, for the most part, inappropriate. Coccygeal fistula is incorrect, for it does not discharge the secretion of an organ; dermoid cyst is likewise incorrect, for it is not a congenital affair, and is said never to occur until after puberty, when the hairy growth in these parts is well developed; the French name, posterior umbilicus, has no descriptive value. The late R. M. Hodges, of the Massachusetts General Hospital, Boston, suggested the name pilonidal sinus, which has also been adopted by Kelsey, and its derivation from *pilus*, a hair, and *nidus*, nut, seems to make it the best descriptive name. The most essential point, however, is that the condition be recognised and the hair, including its roots, thoroughly removed.

Geo. E. Armstrong

Gynecology.

UNDER CHARGE OF F. A. L. LOCKHART AND J. C. WEBSTER.

Ectopic Gestation.

HENROTIN AND HERZOG. "Anomalies du canal de Müller comme cause des grossesses ectopiques."—*Revue de Gynécologie et de Chirurgie Abdominale*, Juillet-Août, 1898.

The writers describe a very interesting case of pregnancy in an accessory pavilion of the Fallopian tube. It occurred in a woman aged twenty-seven. Henrotin operated and the patient made a good recovery. Near the outer end of the Fallopian tubes were two accessory tubes, directly opposite to one another. One of these was enlarged in its outer part, the swelling measuring 4.2 cm. in its longest diameter and 2.5 cm., in its shortest. The interior contained three divisions, communicating with one another; these were filled with blood clot. The wall varied from 1 to 3 mm. in thickness. The pedicle connecting the sack with the Fallopian tube contained no lumen. Various portions were examined microscopically and presented the following appearances. The wall was mainly composed of fibrous tissue, but contained a few muscular bundles; enlarged blood-vessels were found in it. In parts the mucosa contained well-marked decidual cells; here and there were layers of hyaline tissue. In the smaller compartments the wall was lined with flattened cells. In the largest compartment the inner layer of the wall was of a fibrinous nature, in which degenerating decidual tissue could be recognised. In the blood filling the sac, chorionic villi were found, some being more or less degenerate. Numerous hæmatoidin crystals were scattered throughout the clot. The mucosa of the small pavilion attached to the sac contained decidual cells. The embryo was not found.

In referring to the subject of accessory pavilions, the writers state that Richard was the first to describe them, finding five examples in thirty pelves examined by him. Rokitansky described them as occurring frequently. Ballantyne and Williams found them twice in sixty-one examinations. Amann, who has worked particularly at this subject, divides these accessory *ostia* into the following: Those in which several orifices communicate with the lumen of the Fallopian tube, and those due to an apparent division of the latter into two parts. There is a difference of opinion as to the origin of these accessory *ostia*.

The writers also describe another case of an ectopic gestation in a tubal diverticulum. It occurred in a case operated on by Henrotin. The specimen is described as a swelling, about the size of a small apple, developed in connection with the ampulla of the Fallopian tube. The main lumen of the tube was patent throughout, but in the wall was another small canal which extended inwards as far as the isthmus, its outer part being lost in the ectopic swelling. The latter contained blood-clot, in which degenerated villi and hæmatoidin crystals were found. In the wall decidual cells were found. The mucosa of the tube proper showed also some decidual changes. No embryo was found.

Werth was the first to describe an ectopic gestation in a tubal diverticulum, but he was inclined to regard the latter as a result of the pregnancy. Landau and Rheinstein have described a case in which there was no doubt as to the condition

New Growths of the Vagina.

R. Klien. "Die solid primären Geschwülste der Scheide."—*Monatschrift für Geburtshülfe und Gynæcologie*, Mai, 1898.

In this article the author gives a *résumé* of the most important works dealing with the subject of vaginal growths published during the last three years.

He points out that fibromyoma and sarcoma are more frequently found on the anterior vaginal wall, carcinoma on the posterior.

As regards the frequency of primary vaginal carcinoma the following statistics were given :

In 5341 gynæcological cases in Vienna hospitals this disease was found only 15 times.

A. Martin had 4 cases among 5,000 patients.

Schwarze found records of 84 cases in 35,807 cases in the Berlin Frauenclinic.

In the Prag gynæcological clinic 38 cases occurred among 8,951 patients.

Klien thinks that the disease occurs primarily more frequently than is believed. A number of cases are never seen by the physician until both uterus and vagina are affected, and most of these are usually classified as examples in which the vaginal carcinoma is secondary to the uterine disease, whereas it is likely that the uterus is often affected secondary to the vagina.

The disease is found mainly between thirty and sixty years of age. Statistics do not show any special relationship to multiparity.

Primary vaginal cancer occurs in two forms, papillary cancroid, the

most frequent, and the infiltrating variety. The latter tends to grow around the vagina in the form of a ring.

Multiple carcinomatous nodules are very rarely found.

Extension of the disease leads especially to bladder and rectal complications, compression, perforation, etc. The ureters may become involved, leading to renal trouble. The disease may spread to the vulva. The cervix is not often affected. Metastases in other parts of the body are rarely found.

The disease may seriously complicate labour. Rarely may uncomplicated delivery take place. Among the cases described, premature labour, forceps application, embryulcia, laparo-elytrotomy and Cæsarian section had to be employed. Among 12 cases, 10 mothers and 7 infants died.

J. C. Webster.

Pathology.

UNDER THE CHARGE OF J. G. ADAMI.

Bovine Tuberculosis.

THEO. SMITH, M.D. "A comparative study of bovine tubercle bacilli and human bacilli from sputum." —*Journal of Experimental Medicine*, Vol. III., Nos. 4 and 5, 1898.

NOCARD. "The identity of avian and human tuberculosis." Congress of Tuberculosis, Paris, July 27th, 1898.—*British Medical Journal*, Epitome (158), August 27th, 1898.

As Theobald Smith well points out, sufficient care has not in the past been taken to study the minute morphological and cultural differences of the tubercle bacilli obtained from various cases, and further, since Koch published his first remarkable series of cases in which he proved that we had to deal with one common disease affecting man and the lower animals, we have been too willing to accept Koch's dictum of having only to deal with one constant form. Koch, it is true, recognised the possibility that there might be differences among tubercle bacilli from different species of mammal, but he found no differences worth mentioning. Indeed, when the task that he had before him is taken into account, it was inevitable that he should look for points of semblance rather than points of difference, and thus when the difficulty of studying the tubercle bacillus is taken into account and the long months required before any adequate results can be reached, it is almost natural that years passed without any serious opposition being taken to Koch's views.

The first objection to these views came when it was discovered that tubercle bacilli gained from birds, hens and pheasants present certain constant characters differentiating them from bacilli to be obtained from the human lung. Indeed, I believe I am correct in stating that in consequence of the easier growth of the avian form, for some years Koch's laboratory ignorantly supplied other workers, not with human, but with avian tuberculosis: now it is generally accepted that the bacillus in birds is, at least, a very strongly marked variety of the tubercle bacilli. But we still hold that bovine and human tuberculosis are due to the same organism and much of our recent enactments and agitation with regard to the detection of tuberculosis in

the lower animals and the stamping out of the same, is directly based upon this assumption that the disease is one and the same in man and in the cow.

No one has done more valuable work than Dr. Theo. Smith in studying the most important subject of the finer variations, morphological and cultural, of pathogenic bacteria, and in the devising of methods which shall clearly show these finer differences. And largely as a result of his work, many of the best and most valuable bacteriological investigations published of late years upon this Continent, have been devoted to establishing this fact that pathogenic bacteria are by no means constant in their characters. There are, that is to say, certain broad general features characterising the typhoid, diphtheria and other bacilli, but we are bound to recognise, that granting this, the bacilli isolated from different cases or again from different epidemics of disease, show certain special characters, and it may be that a further study of these variations will eventually give us increased light upon the difference in the clinical course and in the symptomatology of different cases and different epidemics.

Now Dr. Theobald Smith has turned his attention to the study of bovine and human tubercle bacilli and he has reached some remarkable conclusions. He appears clearly to establish that there is a distinctively human or sputum and a distinctively bovine variety of the tubercle bacilli. He finds that the bovine variety (as others previously have noted) is invariably a short straight form and that it retains its characters little changed when subjected to modifying influences, to different media of culture and so on. It grows with greater difficulty outside the body and when inoculated into rabbits, guinea pigs or cattle, it shows itself much more virulent than does the human.

The human form as obtained from the sputum, is much more slender and slightly curved, and what is more, existing observations would seem clearly to show that whereas the bovine tuberculosis may pass to the human subject owing to its higher pathogenic power, the sputum bacillus is incapable of finding a foothold in the bovine body.

This last result is a little at variance with the results of previous observers. Bollinger, for example, finds that after four months a calf inoculated with fluid from a tuberculous human lung, showed appearances in the mesentery and the capsule of the spleen corresponding completely with that of spontaneous pearly disease of cattle. Crookshank, inoculated sputum containing numerous bacilli into the peritoneal cavity of a calf which died after a prolonged illness on the forty-second day. But inasmuch as the autopsy showed here a mixed

infection with streptococci, the case is hardly to the point, for the concurrent infection present might have aided the development of the bacillus, which was found in various regions, and the experiment therefore is incapable of proving that under ordinary conditions human bacilli will infect the calf. Sydney Martin obtained rather doubtful results upon feeding cows and calves with tuberculous material: some animals certainly showed tuberculosis, others none at all. He concludes that in the case of tuberculous sputum, we are dealing with material which is less infective to calves than is bovine tuberculous material. Similarly, Frothingham finds that human bacilli inoculated into the peritoneal cavity of calves and again into the trachea, produced only a small number of minute tubercles which were devoid of tubercle bacilli, and in one case lesions were absent. Human tubercle bacilli, therefore, have but a trifling effect upon them. Smith himself finds with sputum bacilli inoculated into cattle, that out of five cases, only one showed lesions beyond the place of deposit or in the lymphatic glands tributary to the region of deposit. In the exception, there was a multiple tuberculous focus in one of the dorsal mediastinal glands, and he himself is in doubt as to whether in this isolated instance there has not been previous latent infection of this gland with bovine bacilli. On the whole, I am inclined to regard the evidence as showing not that calves are incapable of being infected from human phthisical sputum, but that they are infected with difficulty, and putting together all the facts obtained by experiments on cattle, it would seem as though, through natural channels, the sputum bacillus can scarce gain lodgment in cattle.

The second and most important proposition, that, namely of the transmission of bovine bacilli to the human subject, has been much discussed in recent years.

Judging from Dr. Smith's observations, it would appear that as regards its effects upon the lower animals, the bacillus of the bovine disease is distinctly more virulent than that obtained from ordinary pulmonary phthisis in man. Accepting this fact, it is thus very possible that the disease can be transmitted from cow to man. In the *Journal of Comparative Medicine and Veterinary Archives*, for December, 1897, Ravenel gives perhaps the best recent compilation of cases of such presumed transmission, both through wounds of the skin and through the digestive tract. The interesting point is that the disease is apparently set up through the digestive tract, and more especially through the agency of milk from tuberculous animals, is not in general a severe tuberculosis, but a chronic disease with a ten-

dency to heal. Primary abdominal tuberculosis, for example, and tuberculous assites, may be said to be characterised by this tendency to be of a slowly progressive nature, and appear rarely to assume the fulminating character which pulmonary phthisis not infrequently presents, that we may have here another example of those cases in which the micro-organism which has assumed peculiar virulence for one species, has gained a lessened virulence for another..

Theobald Smith, in conclusion, raises the very interesting question as to the relationship between the bovine and the human bacillus and the possible changes such bacillus may undergo during its prolonged sojourn in the human body. He is much inclined to doubt whether the bovine bacillus once entering the human body becomes converted into the sputum bacillus. Such hypothesis he says, would deny us all possibility of utilising different characters of tubercle bacilli in tracing their source. If the bovine variety enter the digestive tract as such and after a more or less prolonged interval, merge from the secondarily affected lungs as a sputum variety, we may as well give up all further study of the tubercle bacillus. But here it strikes me that Professor Smith is a little begging the question, or rather is taking too one-sided a view of the case. We have to get at the truth and facts of the case and we may be fairly sure that once we obtain those facts, instead of preventing research, they will encourage it.

Now at the recent Congress of Tuberculosis in Paris, Nocard brought forward a very valuable and interesting paper bearing directly upon this point of the transmission of characters. The matter is so important that I here quote in its entirety the abstract of the communication given in the *British Medical Journal.*

" The bacilli of avian and human tuberculosis " said Nocard, " were distinguishable from each other by a number of characters the most important of which are the following :—The different appearance of the cultures which in the case of human tuberculosis were dry and warty and in the avain disease were fatty, shining and soft ; the temperature at which the micro-organisms ceased to grow, which in the human was 42° C., while in avian bacilli continued to develop at 43° C and 44° C. Moreover, the action on animals was different ; the fowl almost invariably showed itself refractory to inoculations to human tuberculosis, but succumbed rapidly after inoculation with the avian virus. On the other hand, the dog died of tuberculosis after intravenous and intraperitoneal inoculations of human cultures, whilst it was impossible to infect him even by means of enormous doses of avian cultures. The guinea pig was relatively refractory to avian virus injected under the skin, but reacted to very small doses of

human tuberculosis. The rabbit was equally susceptible of infection by either virus, but after infection with human cultures the animal died of generalised tubercle whilst after avian infection it died of bacillary septicæmia. The horse was hard to inoculate experimentally, but the animal sometimes developed tuberculosis spontaneosly and the disease occurred in two forms, abdominal and pulmonary

These two types corresponded to two different sources of infection Nocard has recently found that bacilli isolated from the pulmonary form have the properties of the human tuberculosis, while those from the abdominal form approximate to the properties of the avian virus. Man, like the horse, appears to be susceptible of both forms. Two years ago, Nocard found in the sputa of phthisical patient bacilli which by the character of their cultures and the effect of inoculation very closely resembled avian bacilli.

Man may, therefore, he concludes, under certain conditions not yet determined, be infected by avian tuberculosis and there is some danger in the use of tuberculous birds as food. A strong argument in favour of the identity of human and avian tuberculosis is the fact that the disease may be introduced into an uncontaminated poultry yard by a keeper suffering from phthisis whose expectoration contains bacilli. Nocard says that the experimental failure of Straus and himself to infect fowls by making them swallow tuberculous sputum, cannot be regarded as evidence to the contrary, the condition of a laboratory and of a poultry yard being altogether different. He added that he had been able to furnish the final proof of the identity of human and avian tuberculosis by transforming a culture of human tubercle bacilli into avian. He filled sacs of collodion with a culture of human tuberculosis on glycerinated broth, and placed them in the peritoneum of fowls. After six or eight months, the fowls were killed, when the sac was generally found to contain nothing but liquid. But it also contained more bacilli than it did originally: the culture was fully alive, and when sown again it was found that it had acquired all the morphological properties of avian tuberculosis. Inoculated in fowls it was harmless. After three or four passages in the same way through the peritoneum of fowls, cultures more completely transformed were obtained which killed guinea pigs and rabbits just the same as avian tubercle did, and which were pathogenic in fowls. Nocard concludes that avian and human are two varieties of the same species and not different species."

This observation of one who is the most able man of science among modern veterinarians, is of the greatest importance. But, instead of the facts that he has made out, causing us to relinquish our studies

upon the tubercle bacilli, it seems on the other hand to open up the only possible avenue for the development of vaccination against tuberculosis.

We have here a condition that seems to be absolutely parallel to what we have in vaccinia and small-pox. It is impossible with the facts now at hand to arrive at any other conclusion than that these two are but manifestations of the action of the same infective germ, modified according to their previous environment. If by passage of the tubercle bacillus through one or other of the lower animals, we can render it harmless to man, then the possibility presents itself that we may be able to set up so mild an infection in the human being through the agency of one of these varieties that the organism will thereby be protected against the form or forms which are peculiarly virulent for the human species.

J. George Adami.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

The Canadian Practitioner.

August, 1898.

1. On the Stages and Forms of Syphilis, with more Especial Reference to the Hepatic Manifestations of the Disease (continued). J. G. ADAMI.
2. Ethmoidal Disease. R. OVENS.
3. Infant Diet. W. J. GREIG.

September, 1898.

4. Some Present Methods of Treatment of Patients at the Asylum for the Insane, London, Ont. A. T. HOBBS.
5. The Physician and Life Insurance. JAMES THORBURN.

2. OVENS describes the anatomy of the ethmoidal sinus, and the etiology and pathology of disease of that structure.

3. GREIG describes fully the plan developed by Holt for the modification of milk for infant feeding.

4. HOBBS points out the very great benefit that has followed the introduction of massage and gynæcological surgery into the treatment of the insane. The class of patients who are benefited by massage are the melancholics. This class are almost invariably subject to constipation and which is markedly relieved by the kneading of the abdominal muscles in the direction of the course of the large intestine. The eradication of pelvic disease has been the most important advance in the methods of treatment of the female insane. The serious fact has been recognized that perhaps one-sixth, if not one-fourth, of all the women in asylums are there because of the special infirmities of their sex and the disasters and penalties of their lives as wives and mothers.

One hundred and thirty-six women were examined, out of a total of over seven hundred and fifty female patients. Of this number one hundred and twenty-six had organic lesions or malformations incompatable with normal genitalia. One hundred and ten women were operated upon, with the result that 36 per cent. were restored men-

tally, 29 per cent. showed an improved mental status, while in 32 per cent. the mental condition remained stationary, and less than 3 per cent. died within a month succeeding operation. This almost instantaneous resolution of the mental faculties in some, and the steady evolution of the normal cerebral functions in others, cannot but afford incontrovertible evidence in support of the relation of physical cause and mental effect.

5. THORBURN touches upon some important features of life insurance, in so far as they concern the physician, and points out the great responsibility which rests upon the profession in the discharge of this most important trust.

The Canadian Journal of Medicine and Surgery.

August, 1898.

1. Notes on a Case of Acute Œdema of the Neck. A. J. HARRINGTON.

September, 1898.

2. The Treatment of Convalescent Club-Foot. V. P. GIBNEY.
3. The Treatment of Diphtheria at the Children's Hospital, Paris, and the Isolation Hospital, Toronto. J. J. CASSIDY.
4. Address in Gynæcology. T. K. HOLMES.

1. HARRINGTON describes the case of a man aged fifty who had been struck, transversely just below the thyroid cartilage, by a lever which was attached to a shunting machine. When seen very shortly afterwards he was unable to speak and breathing was very labored. His neck was very much swollen from the chin to the sternum. The condition was so grave that no time was taken to prepare the man for operation, but an incision was made in the mesial line over the cricoid and down through the trachæa. The relief was immediate, dyspnœa stopped, speech returned, and the swelling rapidly subsided. The hæmorrhage was very copious.

2. GIBNEY discusses the treatment of club-foot during the stage between the time the doctor has pronounced the deformity fully overcome and the time when all concern about the shoes and other retentive appliances may be abandoned. He dwells strongly upon the over correction of the deformity and the maintenance of this over-correction for a reasonable length of time, say from eight to twelve weeks; upon the employment of simple and uncomplicated apparatus; upon the daily manipulation of the foot and the development of the muscles after the deformity has been corrected; upon the opportunity for an occasional observation, extending over many months; upon the superintendence of the construction of shoes which are intended to throw the weight of the body along the inner border of the foot and

to assist in eversion; and finally the resort to bone operations when simpler methods fail.

3. CASSIDY makes a comparison of the results obtained in the treatment of cases of diphtheria at the Children's Hospital, Paris, and the Isolation Hospital, Toronto, during 1897. In the former institution all the patients received a dose of Roux serum immediately after their entrance into hospital, the dose being regulated by the gravity of the disease, age of the patient, and the part of the body affected. The percentage of mortality was 10.80. In the latter institution antitoxin was employed in a few cases, 15 out of 431, and not as a substitute but as a supplement to the ordinary treatment. The percentage of mortality was 15.77. The writer goes on to say that with a little good will and the systematic use of antitoxin the mortality from diphtheria for 1899, at the Toronto Isolation Hospital, ought to bear the same proportion to its recorded mortality for 1897—15.77 per cent.—that the mortality for 1897, at the Paris Children's Hospital—10.80 per cent.—bears to 51.71 per cent. the old mortality rate at Paris prior to 1894.

4. HOLMES discussed the subject of uterine cancer in his address in gynæcology before the Ontario Medical Association.

The Canadian Medical Review.

September, 1898.

1. The Significance of Pain in Gynæcological Diagnosis. ERNEST HALL.

1. HALL has translated and condensed this article from *La Gynécologie*.

The Canada Lancet.

August, 1898.

1. Some Points in the Diagnosis of Morphia Addiction. STEPHEN LETT.
2. Eczema Seborrhoicum. WM. NELSON.
3. Abdominal Pregnancy. S. H. LARGE.

September, 1898.

4. Metatarsal Neuralgia or Morton's Disease. A. A. SMALL.
5. Puerperal Septicæmia. H. D. LIVINGSTONE.

1. LETT quotes Dr. Mattison, Medical Director of the Brooklyn Home for Habitués, who says, in the *Quarterly Journal of Inebriety*, that in the detection of morphinism two tests place the diagnosis beyond doubt, namely urinary analysis by the Bartley process, and enforced abstinence. These means of diagnosis Lett holds are open to grave errors which might lead to serious results. It is not always

possible to place the suspected person in such a position that abstinence can be enforced for forty-eight hours, but supposing this can be done, the patient might have been addicted to some other drug—cocaine, phosphorus, paraldehyde, chloral, etc., or even alcohol; the sudden and protracted deprivation of the accustomed drug would be followed by a train of symptoms so closely allied to those consequent upon the sudden withdrawing of morphia that it would require a very acute diagnostitian to make a diagnosis that could not be called in question. In chemistry there is a surer and better method—the Bartley method is not reliable in some persons taking less than three grains of morphia in the twenty-four hours. He recommends the following test: Collect about twenty ounces of the suspected urine. If it has not an acid reaction, acidulate with dilute hydrochloric acid until it reddens blue litmus. Concentrate to about three ounces and let it stand in a cool place for twelve hours, then filter. To the filtrate add sufficient carbonate of sodium to render it alkaline, and let it stand for twelve hours, then filter and collect the precipitate, wash this with distilled water made slightly alkaline with carbonate of sodium, and dry. Digest the dried precipitate with pure alcohol at a gentle heat and filter, evaporate the filtrate to dryness, dissolve the residue with dilute sulphuric acid, and test for morphia by the iodic acid or other well-known tests. By this method morphia sulphate can be obtained from persons taking very minute amounts of the drug.

2. Nelson discusses the pathology, etiology and treatment of this disease.

3. Large relates the history of a case of ruptured tubal pregnancy of five months duration, upon which he operated successfully. He points out the difficulties a surgeon has to contend with among country people.

4. Small writes on this condition which is a neuralgia, chiefly situated at the anterior part of the foot, especially about the head of the fourth metatarsal bone. In most cases the pain is very acute but in slighter cases it consists merely in a dull ache.

5. [This paper which deals with puerperal septicæmia, is suspiciously like a puff for a much advertised specific.]

The Dominion Medical Monthly and Ontario Medical Journal.

August, 1898.

1. Reflex Neurosis. A. S. Fraser.

2. Some Leading European Gynæcologists and Their Work. A. Lapthorn Smith.

3. Intestinal Obstruction—Diagnosis and Treatment. A. P. Chalmers.

September, 1898.

4. Fibro-Cystic Tumour of Uterus—Hysterectomy—Exhibition of Specimen. A. F. McKenzie.

2. Some Leading European Gynæcologists. A. Lapthorn Smith.

1. Fraser first describes the process of normal reflex action and then points out the various reflex neuroses that may occur in an impaired nervous system.

3. Chalmers describes the several forms of intestinal obstruction, with the cause and treatment of each.

4. McKenzie gives the history of a case of fibro-cystic tumour of the uterus and describes in detail the operation performed for its removal.

Maritime Medical News.

August, 1898.

1. Reciprocal Registration. D. A. Campbell.
2. Medical Evidence before the Law Courts. Wm. Bayard.
3. Gynæcological Notes from Paris. A. Lapthorn Smith.

September, 1898.

4. The Importance of the Early Recognition of Glaucoma by the General Practitioner. J. E. Morrison..
5. Thiosinamin in the Treatment of Painful Gastric Tumours. J. F. Macdonald.
6. Some Leading European Gynæcologists and Their Work. A. Lapthorn Smith.

4. Morrison says that if a person, over forty years of age, desires to change his glasses frequently, if he sees colored rings around artificial lights, if he experiences short blind spells, if he complains that his sight is failing, is slow to recognize colours, has a dilated or irregular pupil, careful search should be made for all the symptoms of glaucoma. If an eye becomes quickly inflamed, lids swollen, conjunctiva greatly injected with vision reduced to mere perception of light, glaucoma should be eliminated before making a diagnosis of anything else. If one is tempted to put atropine into such an eye, do not do it if the diagnosis is doubtful.

5. Macdonald reports upon the use of thiosinamin, in five cases of tumours in the region of the stomach, associated with more or less severe pain, tenderness, vomiting and emaciation. The drug was administered hypodermically and the treatment extended over a period of three or four months. Complete disappearance of the tumour and the alleviation of the symptoms occurred in all the cases. In four of the cases he had no doubt about the tumour being malig-

nant for the symptoms and the history seemed unmistakable. The rapidity of relief in each case was remarkable. Three of the cases were well twenty-one months after treatment. He had also used the drug in a case of cancer of the breast, but without benefit.

Canada Medical Record.

August, 1898.

1. Case of General Paralysis. F. W. CAMPBELL.
2. Some Leading European Gynæcologists. A. LAPTHORN SMITH.

1. CAMPBELL relates in detail the history of a case of general paralysis in a young man, aged 21 years. He was unable to satisfy himself as to the pathological condition present but as the paralysis was all but entirely motor, sensation being comparatively little affected, he was inclined to believe that the *corpus striatum* was the seat of some extravasation which under the influence of ergot was arrested and by the iodide of potash caused to be absorbed.

Eliminative Treatment of Eclampsia. D. W. Ross, Florenceville, N.B. *The Medical Council*, August.

Notes on the Progress of Legal Medicine—The Medico-legal Study of Injuries. WYATT JOHNSTON, Montreal. *The Philadelphia Medical Journal*, August 13th, 1898.

A Demonstration of a New and Original Method of Making Casts. GEO. A. PETERS, Toronto. *British Medical Journal*, Sept. 3rd, 1898.

The Surgeon in Court. B. B. OSLER, Q.C., Toronto. *The Railway Surgeon*, Sept. 6th, 1898.

A New Dissection Showing the Internal Gross Anatomy of the Hippocampus Major. J. G. MCCARTHY, Montreal. *British Medical Journal*, Sept. 10th, 1898.

Some Points in the Micro-Chemistry of Nerve Cells. A. B. MACALLUM, Toronto. *British Medical Journal*, Sept. 17th, 1898.

Treatment of Displacement of the Uterus by Operation Based on Two Hundred Cases. A LAPTHORN SMITH, Montreal. *British Medical Journal*, Sept. 12th, 1898.

Notes from Midwifery Practice. W. S. MUIR, Truro, N.S. *Annals of Gynecology and Pediatry*, September.

Rupture of Vagina During Parturition. J. W. DANIELS, St. John, N.B. *Annals of Gynecology and Pediatry*, September.

Some Leading European Gynæcologists and their Work. A. LAPTHORN SMITH, Montreal. *Annals of Gynecology and Pediatry*, September.

Reviews and Notices of Books.

Sir Benjamin Brodie. By Timothy Holmes, M.A., F.R.C.S. Master of Medicine Series. London : T. Fisher Unwin, 1898. Small 8vo., pp. 255.

We have not so far called attention to this admirable series of works due to the initiative of the late Ernest Hart, a series filling a distinct gap in medical literature. There are, it is true, published from time to time two- or three-volume biographies of distinguished medical men, but the size and cost of these are prohibitive for most medical practitioners. There are several more or less well-known histories of medicine, but there is no standard history available for the use of the ordinary practitioner in which the salient features of the lives of the Masters of our craft receive adequate notice. Yet for a man filled with the love of his profession, there can be few more interesting subjects wherewith to fill up an idle hour than biographies of the great physicians and surgeons. This series above referred to helps to fill the gap, and throughout the English speaking world, the works upon John Hunter, by Stephen Paget, on Harvey by D'Arcy Power, on Sir James Simpson by Laing Gordon, on Stokes of Dublin by his son, Sir William, have all been received with enthusiasm. Other works upon Helmholtz, Vesalius, Claude Bernard and Sydenham are being anxiously looked forward to.

We must confess that we were a little surprised when we heard that Brodie was to be included in this series of the great Masters. Harvey, Hunter and Simpson go without saying, and Stokes did so much to advance clinical medicine, that it would have been a mistake to have forgotten him. But Brodie, it would seem to us, had been more the type of the successful and fashionable surgeon rather than one of those who had notably advanced his craft—an acute and practical man rather than an originator—and the titles of Timothy Holmes' chapters rather bear out this view :—" Early Life and Education," " Early Days of Practice," are followed by the chapters entitled, " Marriage, Professional Success," " Full Tide of Success," " Honours and Public Services." In reading the work, interesting as it is to all medical men, we cannot but recognise that there is singularly little which Brodie has left for the good of the profession, remaining as a permanent memorial to him. His greatest work, and that which at the same time was his most original and valuable contribution to practical surgery, was his Treatise upon Diseases of the Joints ; but even in this it must be confessed, that great as may have been his advance upon his predecessors in his knowledge and in his classification of these diseases, so imperfect at his date was the knowledge of pathology

of joint affections and so imperfect, I may add, does that still remain, that his classification was at the most of transient value. His most important observation that hysteria is the cause of much apparent joint disease, more especially in the female, is still neglected by most practitioners, who thus contribute to the discredit thrown upon the profession by the apparently marvellous success of the charlatan in his simple treatment of this class of cases.

After all the greatest service performed by Brodie was not in surgery itself, but was in the originating and organising of sound teaching of the same and improved hospital practice in London. Before his time the practice at all the Metropolitan hospitals was for the surgeons to go round the wards but two days in the week and never to attend otherwise, except when there were operations to perform, or when they were especially sent for in emergencies. Brodie and Keate at St. George's were the first persons to adopt a different method ; they were at their post daily and superintended everything, and there was never an urgent case which they did not visit in the evening and not infrequently early in the morning also. No wonder that the effect of so healthy a change was soon visible in the increase in zeal and diligence on the part of the students and in their increased numbers. Brodie also introduced the practice of the appointment of clinical clerks, and early in his connection with St. George's he began a course of clinical lectures on surgery, the first lectures of their kind which were ever delivered in a London Hospital. Practically then to Brodie the metropolitan schools owe the beginning of their present methods and owe their main value as teaching schools in the old country.

Londoners are too apt to think that what has been done for the first time in London has been accomplished for the first time in creation. But in this matter Brodie was only following precedents which had already been established in Germany, and, if I mistake not, had already found their way to Edinburgh. Hence, while it may be true that what has been done for the good of London and London institutions has been done for the good of the world and deserves full recognition, it is also true that there is a tendency to unduly recognise such benefit conferred in the metropolis.[1] Valuable, therefore, as were Brodie's efforts to improve

[1] It is interesting in this connection to quote Mr. Timothy Holmes. " . . the paper in the Medico-Chirurgical Transactions which records the great progress in the treatment of stone by means of crushing, or lithotrity, which owed so much to Brodie's ready appreciation of Civiale's teaching and practice and to the zeal and ingenuity which he showed in improving the instruments and elaborating the details of the process. Brodie had, of course, nothing to do with the invention of lithotrity, this was due to French surgeons. And the perfection of the invention whereby the whole stone is removed at one sitting—litholapaxy—was devised by Bigelow, an American surgeon. But it was Brodie who popularised the method in England, and by so doing chiefly contributed to the ready reception of an operation which has robbed what was one of the deadliest diseases that afflicted humanity of nearly all its terror. This will remain to all time one of Brodie's greatest claims to public gratitude."

hospital practice and medical teaching, it does not under the circumstance quite entitle him to a position among the masters in medicine. At most they entitle him, shall we say, to the position of Provincial Master, not of necessity to that of Grand Master.

But granting this, the story of Brodie's life is worth the writing and the reading. He came of a good Scotch family which had invaded England. His cousin, Thomas Denman, became the well-known Lord Denman, Chief Justice; Dr. Bailey, the well-known nephew of John Hunter, had married one of his cousins; Sir Robert Croft, the leading accoucheur of the day, had married another; his grandfather, from whom he took his christian names, is remembered as the patron of Goldsmith, who in 1762 bought a third share of the "Vicar of Wakefield" for 20 guineas, and who printed the same; his father was a very intimate friend of Lord Holland and of his brother Chas. James Fox, and by the Fox family was given one of the livings in their possession, at Winterslow in Wiltshire. There it was that he himself brought up his boys, giving them a sound and thorough classical education.

It is interesting to notice that Brodie was "put to medicine" largely for family reasons, and also that he had no special taste or desire for the profession in which he became so eminent. Mr. Holmes gives us Brodie's opinion on this matter: "Others," he wrote, "have often said to me that they supposed I must have had from the first a particular taste or liking for my profession; but it was no such thing; nor does my experience lead me to have any faith in those special callings to certain ways of life which some men are supposed to have. . . . . The persons who succeed best in life are those who, having (perhaps from some accidental circumstances) being led to embark in them, persevere in their course as a matter of duty, or because they have nothing better to do. They often feel their new pursuit to be unattractive enough in the beginning, but as they go on and acquire knowledge and find that they obtain some degree of credit, the case is altered and they become every day more interested in what they are about. There is no profession to which these observations are more applicable than they are to the medical. The early studies are in some respects disagreeable to all, and to many repulsive. But in the practical exercise of its duties in the hospital, there is much that is of the highest interest; and the collateral sciences, to those whose possessions give them opportunities of cultivating them, offer at least as much to gratify our curiosity and excite our admiration as any other branches of knowledge, not even excepting the sublime investigations of astronomy."

This sentiment of Brodie's will probably come in for a considerable amount of discussion and criticism. There are undoubtedly those whose mental and physical constitution is so admirable that they are bound to succeed in whatever profession or calling they may happen to take up, but I cannot but think that the greater number of those men who have

made a reputation in medicine and those who are even ordinarily successful in the practice of the same, are men who from the first have felt a liking for and an interest in the same, and it is this primary interest in the subject which carries them through what would otherwise be the repugnant portal to medical practice ; I refer to the first two years of the medical student's life. Certainly my own experience has been that those who have entered upon the study of medicine purely for family reasons, with no liking for the same, have in general either dropped out of the race before completion of their years of study, or if they have graduated, have accomplished little good.

It is needless here to detail the progressive steps in Brodie's career. His connection with St. George's Hospital and the important part which he took in making that a great centre of medicine ; his connection with the College of Surgeons from the time that he was lecturer in 1820 ; with the Royal Medico-Chirurgical Society, of which he was President in 1829 ; with the Royal Society, of which he was President in 1858, and with the General Medical Council of which he was chosen first president in the same year. All these matters are well treated by Mr. Timothy Holmes in the book before us, as also, we may add, is the subject of his professional relationship to the Royal Family, and more especially to George IV. It is only necessary here to epitomise that the Life of Brodie is a most interesting and readable work, even though it bears out the contention that Brodie scarce deserves to be placed among the Great Masters of Medicine.

J. G. A.

A Contribution to the Study of Leprosy in Australia. By J. Ashburton Thompson, M.D., D.Ph. Report on the Conditions under which Leprosy Occurs in China, Indo-China, Malaya Archipelago and Oceania. Compiled chiefly during 1894. By James Cantlie, M.A., M.B., F.R.C.S. Being the Prize Essays on Leprosy of the National Leprosy Fund. Second Series. 8vo., pp. 415. London : New Sydenham Society, 1898.

While mainly an Oriental disease, leprosy is of more direct interest to practitioners of the Dominion in that it is a disease not wholly unknown ; it is what may be termed an "old established disease" in Nova Scotia, where at Tracadie there is a leper settlement, and with the influx of Chinese labour upon the West Coast cases are not infrequent there, and appear sporadically among the Chinese here and there throughout the country. The two essays published in this volume of the Sydenham Society, while they approach the subject in somewhat different ways, are of very considerable interest.

In a most judicial study of leprosy in Australia, Dr. Thompson attempts to determine whether the study of the rare cases of the disease occurring upon the Australian Continent, will help us to ascertain the manner in which the disease is maintained. "If," says he, "an area

isolated from the world could be found ; if it could be ascertained to be leprosy-free, if, then, the advent to it of lepers were observed ; if, lastly, the state of that virgin population could be watched during a sufficiently long subsequent period, some weighty evidence might be got. But," he adds, " in order to attain to a positive conclusion, these conditions must be scrupulously fulfilled. The indigenous population must be ascertained to be leprosy-free beyond a doubt ; the advent of the earliest immigrant lepers and their subsequent movements must be watched and recorded ; and either the continued freedom of the population must be established by the most thorough enquiry, or else the date at which cases of lepra began to appear among it must be learned with similar exactitude. This must be impossible, I suppose, except in a deliberately planned experiment ; but there is a chance that the requirements may have been met by one of the unplanned experiments of life, with accuracy sufficient to warrant a very probable conclusion." And Dr. Thompson endeavours to see whether in Australia this chance presented itself. Certainly Australia presented a very favourable ground. The Continent constitutes an isolated area, its aboriginal inhabitants had always lived free from intrusion and admixture of blood until the beginning of its present occupation by the English. Next, this occupation occurred almost within living memory, and when it occurred it was under military control, so that records and reports of all considerable events are well preserved. Thus, granting that the aborigines were found primarily unaffected by the disease, the earliest appearances of this disease upon the Continent ought to be discoverable with some certainty if that be possible in any country at all.

Dr. Thompson, from a study of reports and narratives published during the last century, concludes that there had been even before historical times certain annual visits by Malay prows from Macassar, Timor and other regions to the northern coast of the Continent, and concludes that although we can usually make sure of the primeval state of the aborigines discovered by whites in Australia, we cannot be sure of the primeval state of the north coast natives at any particular part of the coast line and thus the question whether lepers were imported to the north coast, must ever remain unanswered. Of course, the question is not whether Malays, but whether lepers were imported. Further as to the aboriginal lepers first observed in this district during a very few years past, there is no evidence at all as to the date at which lepers first made their appearance. He thus comes at the end of a long search to the conclusion that the requisite etiological certainty is not ever likely to be reached in Australia, and if not there, not likely to be reached anywhere else. Certainly the aboriginals are susceptible of lepra and leprous aborigines were found in some regions, but no case has been recorded in Australia south of the latitude of Maryborough, Queensland. No case was recorded among them in any part of Australia before the year 1892, or until after the advent of immigrants from recognised leprous areas.

While bringing forward these facts Dr. Thompson is so cautious that he will not venture to base any conclusions upon them. He further deals with the subject of the leprous Chinese in Australia and lepers of European descent and the amount of leprosy in the different races, but is so cautious that he reaches no conclusions.

Mr. James Cantlie has studied the distribution of leprosy in China, Indo-China, The Malays Archipelago and Oceania, and among his conclusions are : that while leprosy is not proven to be diffused by heredity, the evidence is not strong enough to prove that it may not be so distributed. Secondly, that where leprosy exists, the disease may affect an individual independently of personal contagion. The Southeastern provinces of China, Tonkin and Fokein form one of the great centres for leprosy and for its distribution ; three-fourths of the immigrants from China being from these provinces. In the various parts of the regions studied, the aborigines ascribe leprosy to the Chinese immigrants. Where the Chinese coolie departs from a country, as in North Borneo, leprosy also disappears.

Mr. Cantle urges a closer inspection of Chinese immigrants travelling by British ships, and also a monthly inspection of the coolies on plantations and wherever Chinese congregate.

We may here suggest that the method carried out by Drs. Wyatt Johnston and Jamieson of the bacteriological examination of scrapings from any suspected nodule or tubercle, whether recent or dried, affords a rapid and sure means for determining the presence, at least, of cutaneous leprosy among such coolies and bands of Chinese. J. G. A.

On Cardiac Failure and its Treatment, with Especial Reference to Baths and Exercises. By Alexander Morison, M.D., Ed., F.R.C.P., Ed., Physician to Out-Patients to the Great Northern Central Hospital and the Paddington Green Children's Hospital, etc. London : The Rebman Publishing Company, 11 Adam Street, Strand-1897.

The first part of this work deals with the diagnosis and symptoms of cardiac failure ; the second is devoted to a consideration of the neuromuscular and hæmic factors in diseases of the heart, and their bearing on prognosis and treatment. The third part is taken up with an account of the general treatment of cardiac failure. The fourth and concluding part enters very fully into the treatment of cardiac failure by baths and exercises, especially as it is carried out at Bad-Nauheim. In an appendix, Dr. Grœdel, of Bad-Nauheim, refers especially to the method of using the baths and graduated exercises.

The remarkable results obtained by this treatment in many cases, is clearly set forth by both writers, and the volume will well repay a close and careful study.

There are many photographic illustrations of the different exercises, which will greatly simplify a thorough understanding of them.

Dr. Morison has not been entirely lead away by the results of this method of treatment to discard measures which so often have proved to be of value. On this point he says : " It may thus be very justly maintained that baths and exercises have a very wide sphere of usefulness, and an experience now not inconsiderable has rendered this conclusion incontestible. But to give one's adhesion to this view is not at the same time to proclaim a belief that these measures are equal to every contingency, or that they may not for a time in many cases have to play a subsidiary rôle. . . . . I should emphatically state that he who trusts mainly to these measures when a cardiac patient is in extremes occurs a grave responsibility, and to rescue when rescue is, as it often is, possible, such a case from death, the exercise of all the skill in the employment of the potent pharmaceutical remedies, in the use of which the genius and patience of generations has instructed us, is the duty of the physician and the rightful expectation of the patient. These pharmaceutical agents are not, in such cases, relegable to the rank of auxiliaries. They afford the patient his only chance of life, while baths and exercises await his convalescence, and may be powerfully promotive of its secure establishment." J. S.

A Clinical Manual of Skin Diseases with Special Reference to Diagnosis and Treatment for the use of Students and General Practitioners. By W. A. Hardaway, A.M., M.D., Professor of Diseases of the Skin in the Missouri Medical College, St. Louis; Physician for Diseases of the Skin to the Martha Parsons Hospital for Children and to St. John's Hospital; Ex-President of the American Dermatological Association. Second edition, revised and enlarged. With 42 illustrations and 2 plates. Lea Brothers & Co. Philadelphia and New York. 1898.

As stated in the preface, the second edition of Hardaway's work contains some changes in the arrangement of the material which at once strike one as a decided improvement. Thus, the alphabetical arrangement of the various diseases in the former edition has been replaced by the now most commonly used classification—Crocker's modification of Hebra's—with the exception that the class of congestions is omitted, the simple erythemas usually found under this heading being included in the inflammations. The nomenclature is that of the American Dermatological Association. In the introductory pages is included a table of the local distribution of skin diseases. This, we think, would better have been omitted. It belongs more properly to the class of books which endeavour to supply the imperfectly educated with aids in diagnosis, and at the same time it is apt to be misleading to just such readers. In this list the diseases credited to the upper lip are, eczema, herpes and lupus, and to the lower lip, epithelioma and syphilis. No one, who knows him, would for an instant suppose that the author wishes to state that

epithelioma and syphilis are the only diseases ever found on the lower lip, yet this is just what the practitioner whose knowledge of dermatology is insufficient to enable him to determine to what class of diseases a lesion in this locality may belong, would conclude on turning to the list for help. Again, though the book is entitled a clinical manual, the entire absence of pathological anatomy and any description of the physiology and anatomy of the normal skin detracts much from its value as a guide to the student of dermatology. Apart from these features, the book is to be commended for clearness and conciseness of descriptions of symptomatology and treatment. The publishers' part of the work has been well done and the two coloured plates are well executed. G. G. C.

Hand-Atlas of Legal Medicine. By Dr. E. von Hofmann. Authorised translation from the German. Edited by Frederick Peterson, M.D., Assisted by Aloysius O. J. Kelly, M.D. Philadelphia: W. B. Saunders. 1898. $3.00.

This book, of which the German edition was barely completed and passing through the press when its distinguished author died, is the authorised American edition of the corresponding volume in the Lehmann series of Hand-Atlases. The illustrations, are throughout coloured lithographic plates and photographs, furnished direct by the publishers of the original German edition. They include a large number of objects which none of the existing works have attempted to illustrate, and represent by photography subjects for which previously one had to depend upon diagrammatic and wholly unreliable wood cuts. The execution of the plates is, on the whole, excellent and gives an accurate idea of the appearances they represent. We would like to have seen included some micro-photographs of spermatozoa, these being objects which our existing text-books seem to find a special difficulty in portraying correctly. Also the omission of plates of the blood spectra makes the work less complete. On the other hand the fact that photographs of Hofmann's celebrated and unique collection of abnormal conditions of the hymen are included makes the book of special value as a work of reference. The translation is accurate, but might with advantage be rendered more idiomatic in future editions. We have no hesitation in warmly recommending the book. W. J.

Atlas and Abstract of the Diseases of the Larynx. By Dr. L. Grunwald. Edited by Charles P. Grayson, M.D. Philadelphia: W. B. Saunders. 1898.

This book is the work of a well-known laryngologist who has sought, by means of his large experience as a specialist and a teacher, to place in the hands of students and practitioners a means whereby those who wish to become more familiar with affections of the larynx may be better able to do so by this work which he places at their disposal. It embraces a very

clear description of the anatomy and physiology of the larynx, methods of examination and practical hints for the examination, these being especially useful, and such as are never found in any book treating of diseases of the larynx. There follows also a full description of the pathology and treatment of the more common affections of the larynx, which descriptions are made all the more lucid and interesting by many beautifully and accurately depicted coloured diagrams.

The book itself reflects great credit upon the publisher, and as a work it is to be strongly recommended as a companion to any well recognized treatise on diseases of the larynx. H. S. B.

Manual of Hygiene and Sanitation. By Seneca Egbert, A.M., M.D., Professor of Hygiene and Dean of the Medico-Chirurgical College of Philadelphia. Philadelphia: Lea Bros. & Co., 1898. Small 8vo, pp. 368. Illustrations, 63.

We have been much pleased with the clear, simple manner in which the various subjects included under the heading of Hygiene and Sanitation, are treated in the work before us. It does not pretend to be in any sense an advanced manual or text-book, but it seems to us that the author has very fully realised his desire to "give a plain statement of the fundamental principles and facts of hygiene and sanitation, together with such explanations and details based on American practice, as would serve to make the work clear and readable." The work, while perhaps not so authoritative or so full, will take the place for American students, that is occupied by Wilson's handbook, for English students.

Transactions of the College of Physicians of Philadelphia. Third Series, Vol. XIX., October, 251 pp. Philadelphia, 1897.

This volume of these well-known transactions is in no sense inferior to its predecessors, and is a credit to an Institution which dates back over more than a century, and which has had for its Presidents during the last 20 years such well-known men as Alfred Stillé, Samuel Lewis, J. M. DaCosta, S. Weir Mitchell and Dr. Hayes Agnew.

In the present volume we would especially call attention to Dr. Stengel's paper on "Auscultatory Percussion in Diagnosis," to Dr. Burr's paper on the "Mimicry of Tumour of the Brain in Bright's Disease," to an article by S. Weir Mitchell, M.D., and Alonza H. Stewart, M.D., on the "Action of the Venom of the Rattle Snake upon the Blood Corpuscles," a paper by Drs. Packard and Steele upon "A Case of Sarcoma of the Lung in which symptoms of Addison's Disease were brought about through secondary growth in the suprarenal bodies: Dr. Van Harlingen's contribution upon the "Hysterical Neuroses of the Skin," and Dr. Savary Pearce's "Study of the Blind, being an Analysis of the Physical and Mental Characteristics of 180 pupils at the Pennsylvania Institution for the Instruction of the Blind."

There are many other papers of considerable value, but these possibly will excite most general interest.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Annual Meeting.

The Twenty-First Annual Meeting of the Montreal Medico-Chirurgical Society was held in the rooms of the Natural History Society, on Friday evening, October the 7th, 1898.

The retiring President, Dr. ROBT. CRAIK, occupied the chair.

The Treasurer, Dr. J. M. JACK, read the following report for the session, 1897-98.

Receipts.

Oct. 1.	To Cash in Bank		$ 93 05
Nov. 4.	" Rent Clinical Society, '96-'97	$ 19 50	
Dec. 24.	" Cash from Lister Dinner Committee	37 41	
1898.			
Jan. 22.	" Interest on Cash in Bank for 1897	4 22	
Sep. 30.	" Cash, members subscriptions	560 00	
			621 13
			714 18

Expenditures.

By Cash to Secretary's Current Expenses, 1897-98	44 80	
" Charges Dr. G. Campbell, Secretary, 1896-97	50 00	
" Account Bentley, printing for session, 1897-98	36 25	
" Charges Dr. S. R. Mackenzie, Secretary, 1897-98	50 00	
" Account Electric Co., lighting for 9 months, 1897-98	14 21	
" Charges Dr. Buller, 9 months rent, 1897-98	318 75	
" Cash, care of Hall, for 9 months	18 00	
" Account E. Cox, re Lister Address	50 00	
" Cash, Treasurer for postage, 1897-98	5 00	
" Account Davis, type-written letters, special	7 50	
" Cash, Natural History Society, rent of Hall	24 00	
		618 51
Cash Balance		95 67

Assets.

Members subscriptions overdue	545 00	
Society furniture	210 00	
Cash on hand in Bank	95 67	
		850 67
		850 67

Liabilities.

Account Dr. Lockhart, re. cash paid for removing books	3 05	
Account M. Hicks for storage on books	3 00	
Account Sabiston Litho. Co., printing	3 75	
		9 80
Net Assets		$840 87

JAMES M. JACK.
Treasurer.

Montreal 5th October, 1898.

The Secretary, Dr. RIDLEY MACKENZIE, reported that eighteen regular meetings had been held during the year, the average attendance being 32. Thirteen new members had been elected during the year, making the total number of ordinary members on the roll 156. With 16 temporary members the grand total numbers 172.

The work of the year had consisted of eleven papers, twenty case reports, sixteen living cases and thirty-five pathological specimens, besides the exhibition of electrical apparatus and skiagrams.

The report of the Committee on Provincial Elections was then read and adopted without discussion, the President thanking the committee on behalf of the Society for the faithful and efficient manner in which it had performed its work.

The following were elected officers for the ensuing year :—

President—Dr. J. G. ADAMI.

First Vice-President—Dr. H. A. LAFLEUR.

Second Vice-President—Dr. J. M. ELDER.

Secretary—Dr. A. J. BAZIN.

Treasurer—Dr. J. M. JACK.

Council—Drs. ROBERT CRAIK, F. J. SHEPHERD and JAMES BELL,

The retiring President, Dr. ROBERT CRAIK, before reviewing the work of the past session, spoke of the unfailing courtesy and kindness shown to him by the members, which had made his duties as chairman a pleasure as well as profit. He thanked the Society for the honour they had done him in calling him to preside over the meetings after an unavoidable absence of years. Although the work of the year had all been of value, there were a few subjects of sufficient importance for special reference. Thus the modern improvements in the different departments of surgery, especially of the uterus, gall-bladder and bile ducts; and the operations for the relief of malignant disease of the larynx and tongue marked an immense advance in this department to one who, like himself, had seen the beginning of the surgery of these organs. Twenty-five or thirty years ago such operations never entered into our calculations in the most remote way, yet the progress made during this period of time was but a foretaste of what the next twenty-five years would bring about. Another point to which reference was made was the growing influence of the Society in municipal affairs. During the year our advice had been sought by influential aldermen on important sanitary matters. Of still greater importance was the reform of the College of Physicians and Surgeons of the Province, which our Society has been largely instrumental in bringing about.

QUEBEC MEDICO-PSYCHOLOGICAL SOCIETY.

The physicians attached to the insane asylums of the Province of Quebec—Arthur Vallée, Medical Superintendent of the Quebec Lunatic Asylum: T. J. W. Burgess, Medical Superintendent of the Protestant Hospital for the Insane: E. J. Bourque, Physician in Chief: Geo. Villeneuve, Medical Superintendent; F. E. Devlin, Ass. Superintendent: F. X. Perreault, A. J. Prieur, C. Laviolette, and E. P. Chagnon, Assistant Physicians of the St. Jean de Dieu Lunatic Asylum, Longue-Pointe—held a preliminary meeting on the 16th of February last, at St. Jean de Dieu Asylum, Longue-Pointe, for the purpose of organizing themselves into a society for the advancement of the specialty.

It was resolved that the Association should be known as the "Quebec Medico-Psychological Society," and that meetings should be held in turn at the different asylums of the province. The following officers were elected for the years 1898-99.

President: Arthur Vallée, M.D., Medical Superintendent of the Quebec Lunatic Asylum.

Vice-President: T. J. W. Burgess, M.D., Medical Superintendent of the Protestant Hospital for the Insane, Verdun.

Secretary: E. P. Chagnon, M.D., Assistant Physician of the St. Jean de Dieu Asylum, Longue-Pointe.

Pursuant to this organization the first meeting of the Society took place at St. Jean de Dieu Asylum, on July 14th, 1898.

Report.—Dr. Vallée, President:—

Election of New Members—A. Marois, Assistant Superintendent; A. Belanger and C. S. Roy, Assistant Physicians to Quebec Insane Asylum: L. J. O. Sirois, Physician to St. Ferdinand d'Halifax Asylum; and J. V. Anglin, Assistant Physician to the Protestant Hospital for the Insane, Verdun, were elected members of the Association.

Resolutions.—Mr. Villeneuve moved that Honourable Mr. J. E. Robidoux be elected *Patron* of the Society. Dr. Burgess seconded the motion. Carried unanimously.

Moved and unanimously voted:—

1. That Mr. Gustave Lamothe, C.R., be elected as legal adviser of the Society.

2. That the Inspectors of Insane Asylums be invited to form part of the Association.

3. That Messrs. Villeneuve and Chagnon be chosen to draw the rules and by-laws of the Society.

4. That the members of the Society have learned with grief the death of the lamented Doctor L. M. A. Noel, Medical Superintendent of St. Ferdinand d'Halifax Asylum, and member of the Quebec Medico Psychological Society, and that they express to Mrs. Noel their sympathies and their most sincere condolence in her great misfortune.

5. That the members of the Society present to the Reverend Sister Superioress of St. Jean de Dieu Asylum, their best thanks for the generous hospitality which she tendered to them, on the occasion of this meeting.

6. That the second meeting take place next October at the Protestant Hospital for the Insane, Verdun.

On the Admission of Patients to Insane Asylums Form of Medical Certificate.

Speaking about the admission of public patients in insane asylums, Dr. Villeneuve regrets to say that most of the medical certificates are far from being equal to the importance of the measure which they authorize.

If a person be in the mental condition, required by law to be admitted into an insane asylum, this fact is to be established by a medical certificate made out according to formulas B. and C. signed by the same doctor and certified under oath.

The administrative decision of the medical superintendent, regarding the admission of patients, rests on the statement of facts contained in the medical certificate.

The medical superintendent, according to the gravity of these facts, is justified in keeping the patient in an asylum, for a certain time, under observation, or, in certain cases, for an unlimited time.

Therefore that certificate is of great importance, because the proceedings relating to the admission of a patient in an insane asylum are taken, for the most part, according to the facts stated in this certificate.

These facts must necessarily decide how long the patient is to be kept under treatment or discharged.

I have been worried very often over the insufficiency of medical certificates, in which doctors accept, without questioning their veracity, the information furnished to them by friends or relatives of the patients, and who are often interested in deceiving them.

To my knowledge people have tried to secure admission for incorrigible children, unmanageable deaf and dumb, old troublesome dotards; even, cases in the very last stage of chronic affections, such

as locomotor ataxia, have been sent to me for admission. Cases of typhoid fever, meningitis, encephalitis, have been brought to the asylum, because the doctor had not taken enough care in his diagnosis.

But the law is very clear on that point; the medical certificate must state the mental condition of the patient, the details of the disease and the necessity of having the patient admitted into an asylum to be therein treated properly.

This document must enumerate the symptoms and facts personally observed by the doctor, which constitute a proof of insanity; moreover, it must state the reason why the patient should be admitted for treatment in an insane asylum.

The fact being proved that a patient is insane, he may be admitted to the asylum, as I have already said, either to be treated therein, or as a matter of public order or security.

Besides the certainty of the proof of insanity, contained in the medical certificate, the medical superintendent must find in it the above mentioned reasons to justify himself in having the patient admitted to an asylum.

Therefore, this certificate must contain facts, and not vague presumptions, especially when the indications for admission are not exclusively deducted from the particular form of insanity of which the patient is suffering actually.

There are circumstances where it may be necessary to have recourse to a magistrate; when the doctor is obliged to rely, for the most part, on statements which are given to him by friends or relatives of the patient; when investigation and inquiry are necessary to establish the veracity of these statements; or when any difficulties arise about the admission of a certain class of patients, persecuted or otherwise.

In these cases, it is well to proceed before a magistrate, according to the law concerning dangerous lunatics, and to take the testimonies of the persons who have witnessed the insane actions of the patient; after that, a warrant is issued by the magistrate, who orders the patient to be sent to an asylum. I believe that the medical certificate ought to be divided in two distinct parts, as in England and the State of New York. In the first part, the doctor should state the symptoms of insanity which he has observed himself; in the second, he should state the facts which he has known from other persons, at the same time, naming these different persons.—This paper gave rise to a discussion in which most of the members have taken part.

At the next meeting it will be more fully discussed.

A Case of Diabetes Treated by Protein.

Dr. DEVLIN reported a case of diabetes, which he was treating with protein. He had already noticed a very great improvement.

Rubeoliform Eruptions Produced by Sulphonal.

Dr. BURGESS reported a case which after the use of sulphonal, presented an eruption so closely resembling that of measles, that he could have easily taken the former for the latter.

A Case of Sitophobia Cured by Sulphonal.

Dr. A. VALLÉE reported a case of sitophobia, in which sulphonal seems to have had an excellent result. A. B., aged 26 years, was admitted to the Quebec Insane Asylum on May 1st, 1893, suffering from melancholia with stupor. She was in a complete state of mutism and refused all nourishment.

Having tried, in vain, to feed her by the ordinary means, we were obliged to nourish her by the stomach tube. This continued for many months. The mental state remained the same all along: A. B., was still in stupor, motionless, head dropping on the chest, indifferent to everything around her and absorbed by her delusional conceptions. In spite of tonics, stimulants, electricity, hydrotherapy and a generous diet, we could not obtain the least improvement in her mental condition.

She still continued to remain speechless, to refuse food, and to offer more and more resistance when she was fed artificially.

The organic functions were greatly deficient: nutrition was bad, the extremities were cold and cyanosed. In fact, A. B., was losing flesh very rapidly and had even become gâteuse.

Very little hope had we of any improvement at all.

I then happened to read in the October number of the "*Journal of Mental Science*" a short report by Dr. Brough, on the use of sulphonal in sitophobia.

Dr. Brough reported five observations which seemed to me very encouraging.

I decided to try the remedy on A. B. On the 10th day of November, at 8 p.m., I gave her 40 grs. of sulphonal. She slept very well at night, and next morning when she woke up, she made a few signs to her nurse, indicating that she wanted something to eat.

Food was brought in immediately and A. B., ate it up greedily. We continued to give sulphonal for a few days: the appetite remained good and the patient continued to eat with relish.

To-day her mental condition is not much better, but she is a little brighter, she talks more readily and her general health is excellent.

Foreign Body of the Intestine—Death—Autopsy.

Dr. BURGESS. R. S., æt. 32. A case of long standing dementia, 1898.

July 3rd, 1898. A slight attack of diarrhœa. Little or no pain, no constitutional disturbance. Treated with lead and opium pills, which checked diarrhœa, kept in bed.

July 7th. Complained of slight pain in abdomen, but no signs of tenderness and no constitutional symptoms. Bowels loose again.

July 9th. Still complains of pain in abdomen, and there is a slight tenderness on pressure, and some tympanites. Vomited several times during day, but no diarrhœa. Pulse slightly increased but full and soft, also a rise of one degree in temperature. Appendicitis suspected.

July 10th. Did not sleep any last night, in spite of a full dose of morphia and is much worse this morning. Constant vomiting with signs of failure. Pulse and temperature both much increased; and a good deal of tenderness over abdomen, especially on right side. Dr. Armstrong was at once called in consultation but decided that it was too late for operative interference. Patient died at 2.40 p.m.

Autopsy performed July 11th, 1898.

Body that of a young man dead twenty hours. Post-mortem rigidity complete. Skin sallow. Post-mortem lividity well marked on back, sides and thighs. Signs of commencing decomposition in front of abdomen, which is distended. Subcutaneous fat absent, and muscles of a dark red color.

On opening the abdomen there gushed out an abundant, turbid, brownish fluid having a fecal odor. On the left side, about the level of the umbilicus is a small, black, gangrenous area, in which projects a broken piece of needle. The omentum is greatly inflamed and adherent to the subjacent layers of the intestine: it is also shortened and thickened. The intestines are greatly distended and reddened, and adherent to one another by recent loose adhesions. The transverse colon is very high up, being concealed by the ribs. The lower coils of the small intestines are collapsed and intensely reddened.

Intestines:—In feeling through the great omentum, near to where it is adherent to the parietes another fragment of needle is discovered. On separating the coils of the collapsed portion of intestine, a wire (hair-pin) is found penetrating the mesentery about two inches from the edge of the bowel, penetrating also one of the coils of the ileum. This wire passes backward, catching up on its passage, the serosa of a second coil of ileum, and is then imbedded in the quadratus lumborum muscle of the left side.

On removal of the intestines they are found normal until about three feet from the ileo-cæcal valve, where the intestine becomes much dilated; the walls and mesentery are much thickened and inflamed. This condition persists for about eighteen inches to a point where constriction has occurred through the mesentery of the intestine. On opening up the affected section, about eighteen inches from the ileo-cæcal valve there are found three or four sharply cut lacerations of the intestine, as if from some sharp pointed instrument. About this point perforation has occurred. At every place where the wire came in contact with the tissues could be traced a brownish-black, rusty discoloration. The appendix was inflamed externally, but practically normal within.

Stomach:—Normal, no trace of inflammation.

Kidneys:—Of normal size. Capsule normal. The sections are pale and cloudy. Pelvis normal.

Spleen:—Small, capsule wrinkled, very flabby, on section, pale and firm. Weight two ounces.

Liver:—Congested with cloudy swelling. Lobules indistinct.

Heart:—Right side contains soft, reddish clot; left side is contracted and empty. All the valves normal.

Lungs:—Right lung free from adhesions, somewhat congested; crepitant throughout on section. Weight nineteen ounces. Left lung adherent by lower lobe posteriorly and to diaphragm. Weight sixteen ounces. Bronchi in both lungs normal.

Brain:—Not examined.

Anatomical Diagnosis:—Septic peritonitis following perforation of ileum by a foreign body. Obstruction of intestines. Strangulation of bowels. Needle in mesentery and abdominal parieties. Cloudy swellings of heart, liver and kidneys. Œdema of the lungs.

The opinion formed was that the hair-pin had probably been swallowed some time previous as there was no trace of irritation in the stomach: that it had passed through that organ and lodged in the intestine: in its passage it had been partially straightened by the peristaltic action of the bowels, and when checked in its progress had perforated the intestine and then become fixed in the quadratus lumborum muscle.

Influence of Traumatism on Certain Mental Affections.

Dr. A. VALLÉE reports a case which tends to demonstrate the influence of traumatism on certain mental affections. L. T., 62 years old, was admitted to the Quebec Insane Asylum on March 12th, 1894, suffering for the last five months from a severe attack of melancholia:

brought on by great pecuniary troubles and alcoholic excesses. He was sad and very depressed, believing himself to be damned for 99 years ; he kept to himself in perfect silence. Nothing could distract him for a moment, and he opposed a passive resistance to all our encouranging exhortations. His general health gradually gave way, under the influence of this great moral depression complicated by insomnia and sitophobia.

L. T. was so emaciated and weak that he was sent to the infirmary during April.

On the 3rd of May, at about 3 p.m., I was hastily called to see him, to extract a foreign body which he had thrust in his eye. I find him sitting on his bed ; to my questions he answers not a word. I perceive a black spot at the internal angle of the right eye ; it was the head of a nail.

I extracted it immediately ; the nail was four inches long. Alarming symptoms soon appeared ; face very pale, extremities cold, pulse thready, left arm and leg paralysed.

The day after he rallied a little, but the hemiplegia continued. On the 5th of May, partial convulsions set in over the face, at the labial commissures, over the neck and over the left arm. These attacks last about 24 hours.

On the 8th of May the hemiplegia tends to get better and the patient seems more lucid.

He gets up after three or four days, all the nervous symptoms have disappeared, except a divergent strabismus of the right eye, which lasted about 15 days. The general health, the mental condition continue to improve gradually.

At the end of May T. is able to walk around the asylum by himself.

His memory is perfectly good, but he does not know why he thrust that nail in his eye.

On the 15th of July, T. leaves the Asylum perfectly well for over a month.

I remember another case where traumatism hastened the cure.

O. R., 25 years old, was admitted a few years ago, suffering from a violent attack of acute mania.

A few weeks after his admission he quarrelled with another patient. During the squabble, he got his thumb bitten very deeply.

Immediately R. is taken with intense nervous trembling for about an hour.

This nervous symptom disappears, he becomes conscious. R. continues to improve and leaves the asylum a few days after perfectly cured.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXVII. OCTOBER, 1898. No. 10.

PROFESSOR CLIFFORD ALLBUTT'S ADDRESS.

In its broad philosophic treatment of the various subjects touched upon and in the exquisite language in which the various thoughts were clothed, the address delivered at McGill on the 13th inst., fully bore out the expectations we had formed of the Regius Professor of Medicine of the University of Cambridge. It is indeed doubtful whether our profession contains another who approaches all that bears upon it from so philosophic a standpoint as does Professor Allbutt. Deeply versed in the writings of the older Greek and Roman as well as of modern philosophers, he further belongs to a type, rare in the old country, still rarer among us, that of the scholar in medicine, and it was healthy and stimulating to listen to him. To some of us indeed, Allbutt's scholarship and love for the exact word may seem carried to almost too great an extreme, and to render his style so rich as to make his writings no easy reading, as witness, the introductory article in his great "System of Medicine." No such accusation, however, could be brought against his spoken address, which from beginning to end carried his hearers with him.

It is not for us here to recapitulate the lecture; doubtless each carried away some different thought or suggestion from among the many poured out. To us, the most striking feature of the whole was the almost hidden current of wistfulness, if we may so term it, with which one, who for long years has striven to maintain medical education in England at the highest level, reviewed his recent experiences in visiting America and Japan, and compared conditions of medical education in the New World with those with which he is familiar in the Old. He saw here, in Montreal, in a colony, a progressive school with hospitals affording provision for teaching the student, distinctly in advance of anything he could recall in the British medical schools:

away in the Western States, at San Francisco, he had come across schools magnificently endowed, equipped with admirable buildings and every modern aid to medical research; and even when he crossed the Pacific, he found the Japanese medical student taking clinical notes (in German), fuller and richer in data of chemical and microscopal examinations of the secretions and blood, than what he ordinarily found in British hospitals. He had not visited Harvard, Philadelphia or Baltimore, but from his knowledge of the course demanded and the work published, he recorded his belief that without doubt Johns Hopkins is at the present moment the foremost medical school upon either Continent. In this judgment we believe him to be absolutely correct. He himself, is head of the medical faculty of that University whose medical degrees are accounted the best in Great Britain, but in striving to improve the training and equipment in Cambridge, he has found himself constantly hampered. In consequence of petty local rivalries, the hospital there does not freely aid the university and, what is more, wealthy as is the Old Country, scarce any of that wealth is at the present time dedicated to medical education. Thus, without the means, it would appear to him as though higher medical education in Great Britain must lag behind and that America with the present enthusiasm for encouraging research and for building hospitals and clinical laboratories in the various cities, each better than the last, must become the great home for medicine, Great Britain, the mother country, being left in the background; not because the men there have a lower standard of education, for still the English and Scotch medical student begins his medical studies with a far better preparatory training than does even the better class American student, but because adequate conveniences for research and adequate endowment for the pursuit of higher medicine are largely wanting.

While admitting this much, and admitting it freely, if somewhat sadly, Professor Allbutt did well to impress upon his hearers the enormous value of tradition. The very rapidity of the advance on this side makes for a too complete confidence in the superiority of men and things present and for a forgetfulness of the heavy debt we owe to our forebears. If medical education here be forging ahead, we must not forget that the first stimulus to such came from those trained in the hospitals of Europe and more especially of the old country. America thus owes a constant debt to London and Edinburgh, while, going further back, modern medicine is founded on the labours of long generations, from Hippocrates onwards. We now are not beginning to build from the rock bottom, but stand, as it were, and build upon a pyramid, incomplete, it is true, but one whose base

was begun to be laid down in the far distant centuries. That being the case, the value of our building depends largely upon the nature of this foundation: we can only build aright by keeping in mind the nature of what we build upon. It is before all necessary for us to keep this warning in mind.

On the other hand we cannot but recognize that there exists the contrary danger of depending too much upon tradition and of being too well satisfied with it. The danger of old institutions is that the tradition of what has been accomplished in the past and the proper pride in that tradition counteracts and nullifies the enthusiasm of those anxious to progress. It is the old story. And if now the progressive party in our relatively new institutions upon this continent has everything in its hands, it is possible, nay, probable, that in thirty years or less, the individuals who now form that party will be apt to rest upon their laurels and to think that the universities have accomplished all that mortal man can accomplish. Thus as local tradition becomes strong the stimulus to progress is weakened.

We now are upon the advancing wave: with Cambridge, Edinburgh and other British centres, after the strenuous efforts of the last two decades to introduce better methods and higher teaching, 'tradition' tends to render the progress more difficult. If this be so, we can but hope that the recent visits of so many leaders of the profession to this country, will stir up the Old Country to emulate whatever is best in medical conditions upon this side, and our feeling of patriotism leads us to hope that the wealthy and public-spirited throughout Great Britain, will be roused to afford more aid to the education of the medical man.

THE NATIONAL LEAGUE FOR THE SUPPRESSION OF TUBERCLE.

Apropos of what we have just stated concerning the falling behind in the Old Country in the matter of higher medicine, we may remark that it is even more true that in the matter of Hygiene, Great Britain has allowed itself to fall behind. For a century or more it had taken the noble lead in almost every branch of preventive medicine, in municipal legislation, in factory legislation, in notification of disease, in water supply, in drainage and the disposal of excreta; indeed in everything which tended to improve the health of the masses. It would be difficult to name a single department of this wide subject of hygiene (if bacteriology be not included therein) in which the Old Country has not taken the initiative in introducing practical and useful legislation. But now, alas! during the last few years, it has been

resting on its oars, while other nations taking advantage of what it accomplished as pioneer, have come up quietly, level with it, and now are shooting ahead. Nay, more, in these as in almost all other human affairs, to rest is surely to begin to drift backwards. There can be no more telling illustration of such backward progress than the recent lamentable withdrawal of compulsory vaccination in the country that gave birth to Jenner.

If by inducing the British Medical Association to meet in Montreal, we accomplished a great service for Canada, it is probable that also, by inviting Dr. Hermann Biggs, of New York, to give the address during the meeting, upon the work of the Board of Health of the City of New York, we accomplished a yet greater service for Great Britain, for, if it be allowed to medical men to use such a metaphor, we thereby turned outwards eyes that had been a little too much occupied in self-complacent introspection.

To many of us in this country and in the United States that address may not have seemed so very novel; we were already acquainted with the remarkable work accomplished in New York by Dr. Biggs and his colleagues. Our leading cities had already copied not a few of the New York innovations, and in some instances the municipal and provincial Boards of Health here and elsewhere had taken the first steps in one or other direction; New York had but followed and it may be, improved. But that address, published in the "*Times*" and in the two leading organs of our profession in London, and circulated thus through the length and breadth of Great Britain came as a revelation to a vast majority of practitioners and those interested in Public Health. The tentative measures taken in Manchester, Liverpool, Leicester and other centres to establish bacteriological laboratories and to control the spread of tuberculosis, diphtheria, typhoid, and so on, as also the municipal legislation bearing upon infectious disease and its prevention, were found to be far behind what New York and other American centres had obtained years ago. It was interesting perhaps for the press to dwell upon the fact that a democracy could be more autocratic than the most autocratic of European communities, that New York could through a single department of its notoriously lax city government, place greater restraints, (however beneficial those might be) upon the freedom of the "freest people in the world" than even Petersburg or Berlin dared venture to place upon citizens accustomed to centuries of bureaucracy. The paradox was interesting, but the fact remained. New York was far in advance of London or any British city in its protective sanitary regulations. The elaborate care taken years ago to establish in Great

Britain a central body (the Local Government Board) to deal with matters of Hygiene was found to have arrested new and healthy developments in preventive medicine and the impression made by the discovery of this fact has been deep and lasting.

Already through the instrumentality of one of the Presidents of Sections at the Montreal Meeting, Mr. Malcom Morris, practical steps are being taken in one direction at least, to bring not only London but the whole of Great Britain, equal to, if not ahead of, New York.

A few months ago, the energetic editor of the "*Practitioner*" published a very remarkable 'Tuberculosis' number of his Journal, which deservedly attracted great attention; to this Dr. Hermann Biggs contributed an article, dealing even more fully with the New York methods in combatting tuberculosis than did his Montreal address. In the August number of the "*Fortnightly*" again, Mr. Morris has quoted largely from the leaflets issued to the general public by the New York authorities. Now with Sir Wm. Broadbent as President, he has organized a National League for the suppression of Tubercle which has gained the cordial support of the Royal College of Physicians and Surgeons, of the medical profession in general and of those high in the land.

As it is pointed out in the last number of the *Medical Chronicle* by Dr. Arthur Ransome, an English pioneer in matters relating to the prevention of tuberculosis, who for long years has been almost a '*vox clamans in deserto*" this league will have to obtain a passage of legislation for Great Britain similar to that in force in New York. There must be complete census of all persons suffering from the malady; notification must be compulsory; the New York methods of obtaining and preserving data must be employed; a census of tuberculous cattle must be obtained and all cattle be tested with tuberculin, and measures must be laid down to prevent infection. The league will also distribute leaflets concerning the disease, will establish sanatoria for the poor[1] and it is suggested that a corps of peripatetic lecturers be organized to deliver simple 'health lectures' to the people.

In the matter of municipal health laboratories as already indicated, the old country is far behind. For the last two or three years men like Boyce in Liverpool, and Délépine in Manchester, have done much to interest their respective communities in the matter, but the support obtained from the municipalities has been utterly inadequate. Now, at last, when every leading American city has had its well paid bac-

[1] While Dr. Trudeau's Adirondack Sanitarium has been established for the last fourteen years, it is only within the last two years that the first proper cottage sanatarium has been established in England under the direction of Dr. Burton-Fanning, of Norwich, at Cromer: now others are rapidly being organised.

teriological staff for some years, London is slowly moving and there is an attempt to establish there an adequate bacteriological laboratory for diagnostic purposes. Altogether, those "at home" are beginning to see that in this as in commercial matters, other nations have of late taken greater strides and that it is necessary for them to bestir themselves into activity if they are to maintain the old supremacy which we so much honour.

THE PLEBISCITE.

The vote on the question of prohibition has been taken and the daily press has announced the result. Judging from what is being said as to this result, one is forced to conclude that the interpretation thereof depends somewhat upon the bias of the interpreter. The vote proves very clearly that the question of prohibition easily runs into politics, and this raises another fundamental question, viz., what are rights and powers of a majority in a democratic community. Has the majority a right to force its opinion upon the minority? Has the majority the right to assume paternal power and to arrogate to itself the duties and privileges of an absolute monarch? Certainly this is not the principle underlying democracy, but rather that it is better for the individual to be responsible for his own conduct and acts than to be controlled by some one else. Under a democratic form of government the individual is free to do as he pleases, so long as he does no injury to his neighbours. He may live plainly or sumptuously. He may eat meat or confine himself to a vegetable diet. He may dress as he pleases, but may not go upon the street naked. He may live in a palace or in a shanty, but he may not make his residence a hot-bed of disease and a danger to the community. According to Spencer the government should protect one community from another and one individual from another, and it should enforce contract, but the government has not the right to compel all men to eat the same food or dress after the same fashion-plate.

The world has sufficient evidence that individuals and communities may be moderate drinkers without injuring themselves, mentally or physically, or doing their neighbours any harm, and it is a vital question whether the majority have the right to prohibit the moderate drinker unless it can show that his moderate drinking injures his neighbours. The teetotaller must not assume that the moderate drinker has no conscience, and the moderate drinker must not assume that the teetotaler is without conscience. These two classes are found in every community, they must live side by side and the one must respect the wishes and tastes of the other or there will be per-

petual discord. The teetotaller must know that moderate drinking can do him no appreciable harm, and the moderate drinker must know that the drink traffic costs the country an immense sum of money each year in police, courts, and jails. Let these two classes then come together and rationally consider on what grounds they can mutually agree. It is drunkenness that should be stopped, and the handlers of liquors should be made to bear the cost to the community of this traffic. The drunkard should be arrested, and if incurable, he should be confined in a hospital or sanitarium. Any man has a right to go out on the street and talk, but if he uses profane and obscene language he should be arrested and dealt with. The same principle of personal liberty and personal responsibility should be applied to the use of wine. A man has the right to take a glass of wine, if in so doing he does his neighbour no harm, and if he becomes intoxicated and offensive he should be dealt with in a way that will insure his neighbour against the offence being repeated. The majority in a community might belong to one religious persuasion, and believe that all others were on the road to perdition, does that give the majority a right to enfore their religious belief on the minority? If so, then the majority believing that the eating of meat produces bloodthirstyness and war, might enact that no one should eat meat. Such a tenet is absolutely ridiculous. We have outlived such principles, and they can not be applied to moderate drinking any more than they can to eating of meat, or to the tenure of theological opinion. The absurdity of such views is demonstrated by centuries of experience.

What the temperance people can do, and all reasonable moderate drinkers will help them in doing, is to regulate a traffic which is injurious, above all others, to every community where it obtains. Lessen the number of places of sale, prohibit the sale to minors and during hours coincident with the greatest drunkenness, for only in some such reasonable way can people holding such diametrically opposed views live together in the same community in peace and harmony.

THE SEPTEMBER MEETING OF THE PROVINCIAL BOARD.

The regular September Meeting of the Provincial Board of Medicine of the Province of Quebec, was held on September 28th, 1898, in Quebec. Dr. E. P. Lachapelle, President, was in the chair, and the attendance included forty out of the forty-two members.

The minutes of the ordinary meeting of July 6th, last, and of the special meeting of July 13th, were read and adopted.

The Treasurer presented his report which was adopted. It was as follows:

Preamble.

July 12th, 1898. Balance in bank (audited)	$7,732 49
July 13th and 14th. Paid by Dr. L. Larue (ex-treasurer)	270 44
Balance	$7,462 05

Receipts.

August 4th, 1898, Received from Dr. L. Larue balance in bank	$7,462 05
License fees	1,100 00
Preliminary examinations	970 00
Annual assessments	66 00
Balance received from Dr. Brosseau	136 00
Dr. Austin, returned	50 00
Interest on deposits	6 76
	$9,790 81

Expenditure.

Governors, meeting fees	$ 60 00
Assessors fees	190 00
A. Deom, agent, and to M. Girouard, salary and commission	225 00
Notices and printing	554 72
Books and binding	65 10
Refunds	200 00
Examiners, fees and expenses	386 00
Dr. A. P. Brosseau, secretary's fees to July, '98	250 00
Insurance and guarantee, premium for four officials	80 00
Stationery	12 50
Sundries: stamps, cabs, etc	11 00
	$2,034 32
Total receipts	$9,790 81
Total expenses	2,034 32
Balance in bank	$7,756 49

Besides five shares of the Bank of Montreal quoted approximately at 244, valued at $488 00 per share.

(Signed) ALBERT JOBIN,
Treasurer.

A motion was passed congratulating the president upon having received the title of "Chevalier of the Legion of Honour" from the French Government.

The following resolutions were also adopted:

That the president and vice-presidents, each in his own district, should be authorized to administer the oath and give the licence to those who were entitled to it after the adoption of the report of the committee on credentials.

That the president be authorised to place on the frame of the portrait of S. Arnoldi, the first president of this college, now in Laval University, in Quebec—but the property of the college—his name, date of death, and the fact of his being the first president.

The report of the committee on credentials was adopted.

The committee on credentials reported the following graduates to be entitled to the licence of the college:

Euclide Archambault, Jos. Zéphirin Beaumier, Wilfrid Bégin, Chas. F. Boisvert, Théophile D. Boulanger, Gordon Byers, Frederick Burke Carron, Jean Rémi Claretien, Edouard Cook, Jules Alphonse Dion, John H. Finnie, A. MacKenzie Forbes, Louis Geoffrion, Jos. Ernest Lavois, Louis Leclerc, J. P. Cyrinus Lemieux, Herménégilde Maranda, Frs. Moise Peltier, Gustave Arthur Tachereau, and David Warren.

Drs. Edward William Archibald, William Delaney, and Edgar Turgeon, are to receive their licence they having already fulfilled all the conditions entitling them to it.

The following candidates for the licence, must pass the professional examination: Drs. Roméo Beauchene, Jos. Narcisse Boivin, Napoleon Boucher, Ernest R. Brown, Ernest S. Harding, Thomas Lovitt, and Chs. R. Rouleau.

The following bachelors of arts and letters are entitled to their certificate of admission to study medicine:—Roméo Beauchene, B.L., Jos. Dominique Achille Chouinard, B.L., Jos. E. Bibaud, B.L., William leMessurier Carter, B.A., Désiré Houde, B.L., Wilfrid Labarge, B.L., J. Albert Paquet, B.A., J. W. Leopold Picard, B.L., J. Omer Royer, B.L., L. Dubois, B.L., Paul Emile Rochon, B.A., Edouard Verdon, B.A., Gabriel Brisset, B.A., Joseph Ayotte, B.A.L., Antonio Gauthier, B.L., Hubert Martel, B.L., Arséne Christin, B.L., Azarie Turcotte, B.L., Armand Beauséjour, B.A., Wilfrid Comptois, B.L., D. Omer Choquette, B.L., George Thibault, B.L., Olivier Demers, B.A., Ernest Gagnon, B.L., Jos. L. L. Gagnon, B.L., Jos. Wilfred Collerette, B.L., Hormidas Ethier, B.A., Ernest Rudolf Brown, B.A., and Ernest Stanley Harding, B.A.

Thirteen candidates have presented themselves for the preliminary examination. Four only have been admitted in the section of letters. They are Joseph Dobbin, J. A. Pilon, V. H. Cullen and Victor Painchaud.

Many candidates having paid the fee either for the preliminary examination or for the licence and not having presented themselves for examination, the committee recommends the adoption of the following resolution. *Resolved*: That the president be authorised to submit to the legal advisor of the college the following question: When a candidate for the preliminary examination, the professional examination, or the licence does not present himself for examination, or for the receipt of his licence, is he entitled to a refund of the whole of his fees or merely to half as in the case of failure at the examination? And that the president shall then act according to the opinion given by the legal advisor of the college.

The report of the committee on professional examinations was then adopted and the examiners named by the president are as follows: The Hon. Dr. D. Marsil, operative surgery and gynæcology; Dr. H. Lafleur, general pathology and chemistry; Dr. McConnell, physiology and normal histology: Dr. A. Demers, medicine; Dr. L. J. A. Simard, ophthalmology, otology and laryngology; Dr. L. Catellier, surgery; Dr. A. Vallée, mental and nervous diseases, legal medicine and toxicology: Dr. L. J. Desroches, hygiene; Dr. L. J. O. Sirois, diseases of children: Dr. L. J. V. Cléroux, materia medica and therapeutics; Dr. C. C. Sewell, obstetrics; Dr. Cotton, anatomy and bacteriology. In the absence of Dr. Sewell, Dr. F. W. Campbell was asked to examine upon obstetrics.

Seven candidates presented themselves for examination on the 27th instant, only one of whom, Dr. Ernest Stanley Harding, passed a satisfactory examination entitling him to the licence.

The following letter from the President of the Pharmaceutical Association of the Province of Quebec was read:

QUEBEC, September, 28th, 1898.

TO THE GOVERNORS OF THE COLLEGE OF PHYSICIANS OF THE PROVINCE OF QUEBEC.

Gentlemen:

Inasmuch as the sale and use of medicines of which the formula is unknown is increasing considerably from year to year, and inasmuch as in a great number of instances these medicines are injurious to the public health, it is of the utmost importance that the sale of these preparations be controlled by the Government more effectually than it is at present.

We, therefore, earnestly pray the College of Physicians and Surgeons to appoint a committee to study this question and to report on it at the next meeting.

The pharmaceutical chemists would gladly lend their assistance to the committee. The pharmaceutical chemists also trust that they may count on the moral support of the physicians to prevent any legislation tending to amend the present law concerning the sale of drugs before, at any rate, the committee which you may be pleased to appoint has submitted its report. A delegation from the Pharmaceutical Association is at your disposal if you desire to hear its views.

(Signed) R. W. WILLIAMS, President,
Pharmaceutical Association, Province of Quebec.

The delegation being admitted, the President of the College replied that it was the intention of the Board to appoint a committee to study

identical topics and that the two committees might, if need be, agree on joint action.

Dr. Baril gave notice that at the next meeting of the Board he would move "That the Board draw up a Bill in order that the Federal Government may decree:

(I) The abolition of the right of manufacturing, importing and selling in the Dominion of secret remedies under any form whatsoever.

(II) The revision of the list of poisons and substances acting as poisons under certain conditions.

(III) The obligation, for all holders of a trade-mark or of a patent protecting the sale of a remedy containing one or more toxic ingredients, of placing on the package or envelope of such remedy the name and the proportional quantity of each of the ingredients in the said remedy: the sale of such remedies to be subject to regulations established by a medical commission appointed for the purpose by the provincial authorities.

Dr. Marsolais presented a report on the proposed auditing of the books of the former Board. He stated that the auditors appointed on the 13th of July had not been able to prepare a report owing to some of the documents relating to the administration of the former Board not being in the possession of the auditors. One ex-official, Dr. Beausoleil, the former registrar, had refused to hand over his account books, maintaining that these books, with the accompanying vouchers up to the date of the last audit accepted by the then medical board, were his personal property and that he was not bound to give them over to the present board. Dr. Marsolais claimed that the books formed part of the archives of the College of Physicians to whom they indisputably belong and that consequently the College has the right to them.

A resolution was then passed authorising the President in the name of the College to institute against the late registrar, the necessary legal proceedings to compel him to furnish to the College a true and faithful account of his administration of the funds of the College covering the period of time during which he performed the duties of registrar, and authorising him in the name of the College to defend any action which might result from such a procedure either in account of first instance or on any appeal.

A report was also received from Messrs. Rainville, Archambault and Gervais, dated 23rd August, 1898, in reply to the following question: "Is the College of Physicians and Surgeons of the Province of Quebec bound to respect the lease passed on the 13th of July, 1898, before Labadie, N.P., between the Board of Governors of the College

and one Minier, for the establishment of a library of medical works? The report states, after reciting the powers of the College, that "The College of Physicians has neither the mission nor the right to establish a public library such as is referred to in Minier's lease passed before Labadie, N.P., and bearing date July 13th, 1898. The late Board of Governors, in adopting the resolution authorising the passing of this lease on the 8th July, 1898, have therefore acted *ultra vires*."

The following resolution was passed: "Whereas the College of Physicians of the College of Quebec is not authorised to make any expenditure of moneys for the maintenance of a medical library, and to wit to maintain the Minier lease: That the president be authorised to repudiate the said lease between the College and Minier either by notarial protest or by action at law, according to the necessity of the case, the College withdrawing from the said lease and having no intention of taking further steps in the matter and refusing to pay the stipulated rent, not having availed themselves of the said lease, and not being desirous of so doing.

The following were named to constitute the "Council of Discipline": The president and secretary of the district in which the meeting is held, who are members, ex officio, and Drs. R. Craik, D. Marsil, A. Vallée and C. C. Sewell.

The following were appointed a committee to formulate a scheme for a change in the mode of voting for the election of governors, and the establishment of elections by districts and by ballot. Dr. Lachapelle, Marsil, Craik, Campbell, Catellier, Pelletier, Cléroux, Desroches and Boulet.

Mr. Honore Gervais was, on motion, appointed legal advisor of the College.

On motion, the registrar was instructed to notify each and every member of the College, at least one month before the 1st July each year, of the amount which he is indebted to the College for annual dues.

An "Executive Committee" consisting of the President, Vice-President for Montreal, and the Registrar, was appointed to settle the question of the library, the salary of the agent, and any other urgent matter concerning administration, such committee to report at the next meeting of the Board,

Mr. Siméon Mondou, of Montreal, was on motion, appointed agent of the College, in the place of Mr. Avila Déom.

It was proposed and resolved that Drs. Lachapelle, Brophy, Campbell, Desroches and Baril, be named a committee to study the question of the sale of secret remedies, patented or not, and to invite

if advisable, the co-operation of the medical boards of the other provinces and the various pharmaceutical associations, such committee to report at the next meeting of the Board, and that the Legislature of this Province be asked, by special request of this Board, not to legislate in the matter of the sale of proprietary remedies until the Federal Government had taken this subject into consideration.

The officials of the College in Montreal were authorised to chose from the following list the assessors for the examinations at the Universities in Montreal for the next three years : Drs. Hon. D. Marsil, Rudolphe Boulet, E. P. Benoit, Trigamne (of Somerset), Gauthier, E., Turcot, Joyal, Dubé, J. O. Beaudry, Lalonde, Provost (Sorel), Cléroux, Cotton, Worthington, Quirk, Brown, Prendergast, and J. H. Bell.

After dealing with some miscellaneous business, and passing the usual vote of thanks to the University of Laval for the use of its rooms, and to the President, the meeting adjourned.

McGILL MEN DINE.

Annual Dinner of the New York Graduate Society.

New York, October 25.—The third annual dinner of the New York Graduates Society of McGill University was held to-night at the Hotel Majestic. Some fifty men, who proudly acknowledge allegiance to the famous Canadian seat of learning, were gathered together, and proved by word and deed that their love for the mother country was still very strong. The menu card contained the names of such dishes as "Filet of sole a la Kitchener," and "Punch a la Fashoda." The decorations consisted chiefly of the Union Jack and Stars and Stripes entwined.

The very first toast on the card was "The President" and was responded to with good will by the men of McGill, who rendered "My Country 'Tis of Thee," with fervor ; the second toast, "The Queen," provoked the greatest amount of enthusiasm. Then came a toast to "The Governor-General of Canada," after which the Rev. Edward Krans, President of the Graduates' Society, toasted the "Alma Mater." Dr. Krans also spoke to the toast "Anglo-Saxon Unity," and "Unity and Expansion." Among the other toasts and speakers were : "The University as a Factor in Anglo-Saxon Accord," the Rev. Dr. Morgan : "Theology and Anglo-Saxon Unity and Expansion," the Rev. Dr. C. Body ; "The Canadian Society," Dr. Wolfred Nelson ; "Sister Universities," A. Percy Bennett, Consul for Great Britain in this city : "Woman's Destiny and Mission as Affected by the University," the Rev. Dr. Dacosta, and "Our Guests" Dr. George A. Shrady.

These officers of the Society were elected for the ensuing year :

President, the Rev. Dr. D. E. Krans ; First Vice-President, Dr. Wolfred Nelson ; Second Vice-President, Dr. James Albert Meek ; Treasurer, H. N. Vineberg ; Secretary, Dr. W. Ferguson ; Executive Committee, Rev. Dr. J. J. Rowanspong, Dr. George Becket and James A. Stevenson.

THE NATHAN LEWIS HATFIELD PRIZE.

The First Nathan Lewis Hatfield Prize for Original Research in Medicine has been granted under the following conditions :

The College of Physicians of Philadelphia announces through its Committee that the sum of Five Hundred Dollars will be awarded to the author of the best essay in competition for the above prize.

Subject : " A Pathological and Clinical Study of the Thymus Gland and its Relations."

Essays must be submitted on or before January first, 1900.

Each essay must be typewritten, designated by a motto or device, and accompanied by a sealed envelope bearing the same motto or device and containing the name and address of the author. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers or their agents within one year.

The Committee reserve the right not to make an award if no essay submitted is considered worthy of the prize.

The treatment of the subject must, in accordance with the conditions of the Trust, embody original observations or researches or original deductions.

The competition shall be open to members of the medical profession and men of science in the United States.

The original of the successful essay shall become the property of the College of Physicians.

The Trustees shall have full control of the publication of the memorial essay. It shall be published in the Transactions of the College, and also when expedient as a separate issue.

GESTA MEDICORUM.

" QUICQUID AGUNT MEDICI NOSTRI FARRAGO LIBELLI."

Owing to the recent political troubles in Bohemia, Prof. von Rosthorn, Professor of Gynæcology in the German University of Prague, has resigned to accept a position in Gratz.

Dr. Michael Foster, Professor of Physiology in Cambridge Univer-

sity, has been elected to the Presidency of the British Association for the Advancement of Science in succession to Sir Wm. Crookes.

Virchow's visit to England is an event of more than common interest. Invited over to deliver the second Huxley Lecture at the Charing Cross Hospital, he accepted with readiness and pleasure, although burdened with pressing work at home. The lecture is published in the *Philadelphia Medical Journal*, of the 8th of October, and should be read by every medical practitioner and student.

The Undergraduate's Medical Society of McGill University has elected the following officers:—Hon. President Prof. Geo. E. Armstrong, M.D.: President, F. T. Tooke, B.A., '99: Vice-President, T. E. Craig, '99: Secretary, J. E. M. Carnwath, '00; Treasurer, F. S. Porter, '00; Reporter, W. A. Wilkins, '99: Pathologist, A. H. Gordon, '99. Councilmen, Dr. Lafleur, Dr. Garrow, A. C. P. Howard, B.A., '01.

It is reported that the micro-organism of rabies has been discovered, Memmo (*Centralb. f. Bakt. Bd.* xxi. 17-18) describes a blastomycet which he could cultivate and which when he inoculated it into dogs rodents, or birds, produced the typical disease. It grew best on glucose-agar slightly acidulated with tartaric acid. The organism is found in the cerebro-spinal fluid, brain, cord, saliva, and paretid gland.

Dr. Hamilton K. Wright, the Medical Registrar of the Royal Victoria Hospital, who was last year appointed Exhibitioner to the British Medical Association, and John Lucas Walker Exhibitioner of the University of Cambridge read at the meeting of the International Physiological Congress at Cambridge, the results of his investigations upon the action of chloroform and ether upon the cells of the cortex and will this Autumn give a series of demonstrations at Cambridge upon the pathology of the nervous system.

The American Electro-Therapeutical Association held its 8th Annual Meeting in Buffalo, Sept. 13th to 15th, Dr. C. R. Dickson, Toronto, in the chair. Many interesting papers were read. Those contributed by Canadians were:

"Cases of Lightning-Stroke causing Diseases of the Eye," G. Sterling Ryerson, Toronto. "Electricity in the Treatment of Goitre," C. R. Dickson, Toronto. "Surgical Uses of Electricity," C. R. Dickson, Toronto. "Electricity in the Treatment of Certain Diseases of the Eye," G. H. Burnham, Toronto. The Association meets next year in Washington.

A very instructive paper on 172 cases of Diabetes treated in the Massachusetts General Hospital, during the past 64 years, was read by Drs. Fitz and Joslin before the recent meeting of the American

Medical Association. Judging from the examination of these records it would appear that we have really made no advance in lessening the mortality from this disease. Much has been done, however, in clearing up the nature and course of the disease. Previous to 1851, the presence of sugar in the urine was determined by tasting it. An antidiabetic diet was first introduced about 1840. From then on to a comparatively recent period, it was the custom to strictly limit not only the sugar making foods, but also all fatty substances. The practice of the present day is to give fatty substances, as they spare the albuminous tissues. At the present time it is not considered advisable to push antidiabetic regimes to the extreme. Most diabetics can assimilate small quantities of sugar. It is a rational therapeutics to allow as much sugar to be taken as can be properly assimilated. The quantity be it ever so small will tend to promote healthy nutrition.

The twenty-sixth annual meeting of the American Public Health Association began on Tuesday, Sept. 27th, in the Railway Committee Room of the Parliament Buildings, Ottawa. Addresses of welcome were delivered by Mayor Bingham, Dr. Sweetland, of the local committee, and Sir James Grant, M.D. These were responded to by the President, Dr. Lindsley, Dr. B. Lee, Philadelphia, and others.

The Hon. Sydney Fisher, Minister of Agriculture, was present at the opening, and delivered an address. The sessions extended over three days, closing on the 30th.

The first subject discussed was "The Disposal of Sewage," by Dr. R. W. Bucke, London, Ont., in which the utilization of sewage for fertilization, as adopted at the asylum in London was strongly urged. The sewage was diluted, well mixed and spread on the land. This yielded a remarkable crop of wholesome vegetables and cereals absolutely free from any taint. Dr. Bucke concluded that this was nature's way of disposing of sewage. His observations were endorsed by Dr. Bryce, the provincial medical health officer.

This view was opposed by Mr. Thomas McFarlane, Chief Analyst of the Inland Revenue Department. Mr. McFarlane said that diluted sewage has no value as manure. He gave the results of attempts in the Old World to utilize sewage for fertilization, In London, England, 17,000 tons of sludge prepared for fertilization is made daily from the sewage. Anybody who wants it can have it gratis; it finds no customers, however, and is carried fifty miles to sea and there dumped.

A couple of suburbs of London have tried sewage farms, but propose to abandon them as soon as they can get connection with the London sewage system. Mr. McFarlane gave particulars of various

experiments in the utilization of sewage for fertilization in England and Europe, none of which have proven financial successes.

Filtration through coke was advocated by Mr. C. G. Horetzky; this, he maintained removed all organic waste. A million gallons of sewage could be strained, he estimated, at an expenditure of $5.43 on coke. The coke was then burned and its value as fuel was unimpaired. The subject was further elucidated by a paper on the filtration of sewage by Captain W. F. Vanbuskirk, of Stratford, Ont.

Mrs. Ellen H. Richards, of the Boston Institute of Technology, contributed a paper on the urgent need of sanitary education in the public schools. Mrs. Richards said it was most apparent that the average American citizen has not accepted the teaching of sanitary science as a part of his creed. The remedy for this ignorance is to be found in securing the correct teaching of the elements of public hygiene in the public schools of the country. The diseases among American soldiers in the late war were caused, she claimed, by culpable ignorance among the officers. Mrs. Richards advocated the appointment of a committee to prepare a primer which shall contain the essential principles of preventive medicine, and which can be as universally taught as is first aid to the injured. The recommendation, however, did not meet with favor as it was considered that there are plenty of text books in the schools already, in fact one delegate held there were far too many.

Mr. William Paul Gerhard, C. E., New York City, contributed an interesting paper on "Theatre Sanitation," in which he criticised severely the unsanitary condition of theatres.

Dr. P. H. Bryce, Toronto, read the report of the committee on "The Cause and Prevention of Infectious Diseases." He announced the general conclusion that until regular medical supervision of the public schools becomes as recognized part of municipal health work, no great advance over present *laisser faire* methods are to be expected. In cases of diphtheria, the most effective preventative of the spread of the disease he said was the prompt measures for the detection and isolation of the afflicted person. He advocated cottage hospitals for the treatment of the patients.

Dr. Ernest Wende, Health Officer, Buffalo, N.Y., read a paper on "The Cause and Prevention of Infant Mortality," in which he stated that since the long-tubed nursing bottle had been prohibited in Buffalo, the infant mortality had diminished one-half. A resolution was passed placing on record the Association's conviction as to the danger of the long-tubed nursing bottle.

Among other contributions was a discussion on tuberculosis by Dr.

Irving A. Watson, New Hampshire, Drs. Sir James Grant, Bryce, and Gibson, (Iowa). Other papers were: "On the Treatment of Inebriates," A. M. Rosebrurgh, Toronto; "Yellow Fever," Eduardo Liceaga, Mexico: "An Epidemic of Typhoid Fever (Paterson)," J. L. Leal, New Jersey; "What Constitutes an Epidemic," Benj. Lee, Philadelphia; "The Farm-well." F. T. Shutt; "The Chlorine Matter in Well Water," A. McGill; "Typhoid and Dysenteric Diseases," Veeder, Lyons, N.Y.; "The Fly as a Cause of Disease," R. Ramirez, Mexico; "Compulsory Vaccination." M. Septien Queretaro, Mexico; "Leprosy in Minnesota and the North-West," H. M. Bracken, Minn.

Among the resolutions adopted were the following: "That the Governments of the United States, Canada and Mexico, be requested to make the Bertillon classification the basis of the mortality statistics of the censuses of 1900 and 1901. The committee also approved of a plan of procedure relative to the periodical revision of the Bertillon classification of causes of death as submitted by the committee of demography and statistics in their sanitary relation. The committee also recommended that President Lindsley appoint one representative each from Mexico, United States and Canada to act jointly with each other and with similar commissioners from other countries in the revision of the Bertillon classification of causes of death; and that said commission shall be authorized to adopt such necessary rules in conjunction with other countries associated in the work of revision as shall be necessary for its successful conduct. They shall report progress to the association at each annual meeting and shall be continued until the work of revision is completed and their successors selected for the next periodical revision."

"That a committee be appointed to endeavour to bring about co-operation between sanitary laboratories and to have them send reports of the progress of their work to the American Public Health Association."

"A recommendation to the Government of the United States to establish Leper-homes similar to those in Canada and Mexico."

The Association meets next year in Minneapolis and the following officers were elected:—President, Dr. George H. Rohe, Baltimore; First Vice-President, Dr. Henry Mitchell, of Asbury Park, N.J.; Second Vice-President, Dr. Jesus Monjaras, San Luis Potosi, Mexico; Secretary, Dr. C. O. Probst, Columbus, Ohio.; Treasurer, Dr. Henry D. Halton. Brattleboro, Vt.; Executive Committee, Prof. F. C. Robinson, Brunswick, Maine; Dr. G. Mendezabel, Mexico; Dr. P. H. Bryce, Toronto: Dr. H. M. Bracken, Minneapolis; Dr. Irving A. Watson, Concord, N. H.; Dr. F. W. Wright, New Haven, Conn.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXVII. NOVEMBER, 1898. No. 11.

Original Communications.

THE ALIMENTARY CANAL AND HUMAN DECAY IN RELATION TO THE NEURONS.[1]

BY

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Death is a complex problem. In the varied stages of growth in the human system, we trace frequent indications of decay. At an early age, the hair bulb dies, the hair drops out, and disappears. In the same way, teeth decay, and the masticatory process is being rapidly accomplished, more by artificial than natural grinders. Such evidences of lessened vitality, are not confined to these tissues alone. Nerves and nerve centres participate readily. No part of the human system is attracting closer or more careful observation than nerve tissue and the part it plays in the promotion of the vital spark, so essential to every act of life. The brain is the great battery, plastic, pliant, thought producing, and having as its matrix, cells, which communicate with the cells (nervous) in all parts of the human frame. This linking of cell agency is all important, any interruption to such connection being at once marked by functional inactivity. Recent discoveries, in the line of nerve tissue formation, have defined small cellular, almost rod shaped bodies, as component parts of cell nervous tissue, *known as neurons*, which doubtless play an exceedingly important part, as to the elimination of normal nerve power, without which, no positively healthy function can be established. For some time, my attention has been directed towards a study of the alimentary canal, so peculiarly constituted. Into this canal, from the mouth to the anus, are poured the secretions of the various glands, outside and inside of which, is more than a life's study. Sanitary science is mak-

[1] Read before the Medical Society, Ottawa, October 27th, 1898.

ing rapid progress, but outside sewage cannot compare, as to importance, with the internal sewage of the human system. It is a well known fact what the toxic effect of an impure gas is upon the system under the most ordinary circumstances. So in the intestinal canal supplied by a nervous system of a most elaborate and complex structure, it is most reasonable to suppose that the activity of these very neurons, in the ganglionic centres around this very canal, should in time become subject to marked functional inactivity, and long prior to any evidence whatever of organic disease. The gases of the human system are not so noxious as carbonic acid, and still, the want of care in the digestive process, cannot, and in fact does not, fail to bring about results of a most telling character in the very process of sanguification. The death process in life, is often slow, and yet, progressive in character. Intestinal villi, and the mucous membrane of this complicated alimentary canal, depend largely on the distribution of normal nerve force, in order to keep up normal activity. In this very canal, the death process frequently sets in, long prior to a recognition of the fact. One of the most interesting topics, recently brought to notice by at least four or five writers, two in Germany, one in France and one in America, is the idea, that the nerve cells, were capable of movement, to such an extent as to enable them, to alter the degree of their relationship to one another. The only physiological observation quoted in behalf of this theory, is that in 1890, by Wiedershein, a German, who saw in "Leptodora Hyalina," an invertebrate, one of the Entomostraca, the nerve cells of the œsophageal ganglion move in a slow flowing fashion. Altered relationship of the neurons may be connected with a retarded distribution of nerve power, and thus become closely associated with the development of the hysterical paralytic condition, so transitory in character. The explanation given, is that the neurons of the arm centre of the cortex, retract their processes in such a way, that their end tufts, no longer bear the normal relation to the spinal neurons. We must acknowledge that a new sphere of observation, is opened up, by this attractive departure in neurological structure, having so wide a range, and yet so closely associated, with the normal distribution of nerve power. The process of renewal of old combinations of neurons, has been ingeniously worked out, and may lead to the discovery of new truths, of much practical value, as to the regulating power of nervous energy. "Experiments " appear to afford adequate evidence that, in a normal state of the body, " the integrity of the medullary vaso-motor centre, is essential to the " production and distribution of those continued constrictor impulses, " by which the general arterial tone of the body is maintained, and that

" an increase or decrease of vaso-constrictor action in particular arteries, " or in arteries generally, is brought about by means of the *same* " *medullary vasomoter centre.* But we must not conclude therefore " that this small portion of the medulla-oblongata is the only part of " the central nervous system which can act, as a centre for vasomotor " fibres. We are rather to suppose, that the spinal cord, along its whole " length, contains, interlaced with the reflex and other mechanisms by " which the skeleton muscles are governed, vaso-motor centres and " mechanisms of varied complexity, the details of whose functions and " topography, *have yet largely to be worked out.*" (*Foster's Physiology*, 1893, p. 281 and 284.)

That there is much new ground to be broken, in the line of observation, connected with the spinal vaso-motor centres, is conceded by leading physiologists. " It has been demonstrated that the body is " constantly subjected to the risks of poisons produced within itself, " many of the poisons produced, such as the ptomaines and leucomaines, " are of the chemical nature of the previously known alkaloids, in " toxic power, and reproduce their leading effects. The organism, " even in a state of (supposed) health, is a veritable storehouse of these " toxic substances. The respiratory passages, and intestinal canal, are " crowded with micro-organisms. In these circumstances it is of " interest to enquire, what defence, man can oppose to the disease " and death producing poisons, by which he is so constantly endan- " gered." (Address in Medicine by Thomas Richard Fraser, M.D., British Medical Association.) Long prior to disease, the result of toxic origin, we have the indications of toxic functional disturbance and nowhere more so, than in the intestinal canal. According to Foster's (p. 285) Physiology, the chief and usual cause of the movements of the stomach and intestines, is the presence of food in the interior. " The afferent impulses from the stomach travel apparently by the vagus, *but we do not know the exact manner in which the food produces the movement*, and again (on page 384) the alimentary canal, like the heart, though to a less degree, possesses within itself such mechanisms, as are requisite for carrying out its own movements, and as in the case of the heart, *there is no adequate evidence that the ganglia scattered in its muscular walls*, viz., *those forming the plexus of Auerbach, play any part in developing these movements.*" Thus far it is quite evident, a considerable degree of doubt exists, as to the exact physiological ground work, on which rests the remarkable changes which take place in food transformation, prior to becoming incorporated with human tissue. The conversion of vegetable matter into muscle or blood, is unique in character, and entirely in advance

of the finest external laboratory manipulation. The plexus of Meissner in the submucous coat of the bowels ; the plexus of Auerbach, in the thin sheet of connective tissue of the muscular layers of the intestine ; and lastly, the vaso-motor centres of the spinal cord, constitute a trio of nerve generating power alike interesting and attractive, and which doubtless are intimately associated, in the transforming process of food to tissue, and yet we must acknowledge, with Prof. Charcot, that there still exist numerous lacunæ in this study. The nervous system, reduced to very simplest form, is represented by two elements, a nerve cell, and a conducting tube, and the association of these two elements constitutes nerve centres, and nerves, which guide and direct capillary circulation in every part of the human frame. The point to which I desire to call attention at present, is with reference to the influence gradually produced in the system, by defective intestinal sewage, and how it is to be remedied. That such at times produces a poisonous influence on nerve tissue and capillary circulation, is undoubted in character, and of much greater importance and frequency, than generally supposed. While noting the effect of electricity, through the neurotone, on the muscular tissue of the dilated or ballooned bowel, I was impressed by the marked improvement otherwise, in the system, in consequence of which, a series of observations was made, on the alimentary canal, which led to the following deductions :

1st. The irregularities of the digestive process in the alimentary canal, are of much more frequent occurrence than generally supposed.

2nd. The internal sewage of the system, cannot be too critically examined.

3rd. The toxic effect of such accumulations leads to a condition of the nerve centres, changed in character, and destructive in a great measure to the elimination of normal nerve energy, in the ganglionic nerve centres. That the recently discovered neurons, play an important part in the vitalizing power of nerve energy, is a reasonable deduction. A path is now open, in which life, under ordinary circumstances, *may be prolonged*, providing no organic disease is present. There is little doubt, that as years pass on, in a quasi indifferent manner, the *neurons*, of the ganglionic centres, particularly in close relationship with the alimentary canal, become influenced, by the toxic effect, of defective internal sewage, and as the result, blood making power becomes defective, as photographed in facial expression. The question is, how to counteract this condition, and bring about, as near as possible, a normal state of the system. One of the first points to observe, beyond the ordinary conditions of the alimentary canal, is the state of the abdominal nervous system. Under ordinary circumstances

the application of the Electro-Neurotone of Hodgkinson, to the abdominal walls, produces a sensation electric in character, which must be adjusted, to the needs of the patient. The power of static electricity seems to be chiefly as a regulator of functions, according to *Munnell, of Brooklyn*. It increases metabolism, so a person can absorb more oxygen, and this improvement in nutrition, is a vast power for good. The spark of its action, sets up a molecular change, and acts as a stimulating massage. At the convention of the American Electro-therapeutic Association, Dec. 29, 1894, (*The Times and Register*) it was reported, that static electricity causes contraction of the protoplasm both animal and vegetable, it excites nerve fibres, nerve centres, and nerve cells, to functional action, and to produce their separate effects, motor, sensory, secretory, sympathetic and vaso-motor. These data electric in character, induced me to make further enquiry, by which it was ascertained that many cases of constitutional debility had their origin in the alimentary canal, and that the nervous system participated largely in such abnormal conditions.

In the discussion of Dr. Buzzard's paper (Edinburgh Meeting British Medical Association) on the Selective Action of Toxic Bodies on the Nervous System, the following statement was made: "It seems "likely from the clinical symptoms, that whilst at the outset there is "profound interference with the nutrition of 'the neurons' over a "widely extended area, recovery rapidly occurs, in such as do not "suffer change in their nucleus." It is this class of cases particularly, to which I refer, of a purely functional character, and not associated with *insular sclerosis*, or even *multiple neuritis*, both of which conditions are most likely the result of degenerative changes in nerve structure. Constitutional debility, the result of defective intestinal assimilation, protracted in character, is undoubtedly a powerful factor, in the poisoned nervous system, to keep up that condition. The neurons of the nerve centres, although not changed in structure, are in a measure defective as to function. Here, as well as in other neurotic states of the system, the precise condition is not, as yet, defined. However, when by the neurotone treatment, so marked improvement as to function takes place, the inference is, that the electric current, in a measure re-vivified the nerve centres, and their neurons, in direct connection, so as to re-establish the normal distribution of nerve power, in those parts defective in that particular. The following recent observations of E. Muller and Manicatide (March 3rd, 1898, *Deutsche Medicinische Wochenschrift*). "Examined the cells in the central nervous system, of seven infants, under three months of age, who had suffered from gastro-intestinal diseases. In all seven, changes

were found in the cells, of the brain and spinal cord. The cells were found to lose their form, become indistinct and even the processes of the cells disappear, and the nucleus, as well as the nucleolus, often displaced."

These observations point beyond a doubt, to a close relationship between alimentary assimilation and nerve cell agency. Everything has a beginning, and the problem is, how to obviate the difficulties, which may take place even in ordinary intestinal functional disturbance, at a time when treatment may be of service *and life's span thus prolonged.* The physiological action of electric currents plays an important role, in the treatment of diseases of the nervous system. True, the nerve current has been compared to electricity, but this idea, has recently been abandoned. The important point is, that by the action of the electric current, we modify the electric state of the nerve, and the properties of the sensory or motor nerves reappear, and perform their regular part in the economy. There, by the influence of currents, nutrition is sure to improve the vitality of the tissues stimulated to renewed energy, brought about by a direct action on the trophic nerves, and on the tissue molecules of the organism, whose vitality is thus summoned into increased activity.

Alexander James, M.D. (Edinburgh, British Medical Association), in his paper on the Clinical Varieties of Hepatic Cirrhosis, stated " that the effect of an irritant on living tissue is increased metabolic activity, and the effect of increased metabolic activity is the sacrifice of growth and development to reproduction."

The systemic condition on which I now base these observations, is in cases of diminished metabolic activity in the *neurons,* prior to a sacrifice of growth and development, as after that stage, little if any influence in an electric method can be exercised. Fully aware of the doubt and uncertainty of biological problems, and while seeking for the explanation of certain functional disturbances, these few facts have been noted.

The alimentary canal and its distubances, have within the past few years, attracted more than ordinary attention. The impression is gaining ground, that various manifestations of disease may arise through the absorption of toxic substances from within the canal. The arguments in favour of the toxæmic origin of intestinal disturbance are not sufficiently clear, owing to the absence of clinical data based on the pathological conditions involved. The important fact announced in 1880 by Baumann, that the various aromatic substances formed within the intestine, such as indol, phenol, cresol, etc., produced by " *anaerobic bacteria*" upon proteids, are passed off

by the body, when absorbed through the urine, in combination with sulphuric acid in the form of etherial sulphates (Herter, *N. Y. Medical Journal*, July, 1895). This fact forms the basis of the study of *intestinal putrifaction*, on which line of chemical research, this subject requires much careful enquiry. The frequency of perityphlitis is an acknowledged fact, and the discovery by Salkowski, of pathological quantities of *indican* in connection with that disease, leads to a line of investigation of much interest. The symptoms which usually direct attention to the alimentary canal, are often so slight as to readily escape notice, while at the same time, the constitutional results may be well defined. The following cases are presented as an illustration of clinical manifestations occurring in individuals with whom intestinal indigestion and neurotic disturbance were prominent factors. The sensation of pain in cases of intestinal indigestion is not a usual symptom, and it is in quasi indifferent cases, where putrefactive changes are slowly progressing without even spasm of the muscular coats of the intestines, that careful information should be obtained, not only as to the rapidity of the digestive process, but also as to the peculiarity of the alvine evacuations. In no part of the entire system, does functional disturbance proceed more steadily and quietly than in the alimentary canal, and it is remarkable how its mucous lining accommodates itself to the high living of the present age.

Diminution as to firmness of muscular fibre ; occasionally indications of lassitude ; a feeling of emptiness, described as a " gone feeling," indisposition for either mental or physical exertion, without any assignable cause,are marked pointers for *neurotone* treatment to correct functional, neurotic, and digestive irregularities, in the alimentary canal, prior to the advent of structural change. The treatment in such cases, beyond ordinary tonics and purgatives, as required, consists in neurotone applications, to the abdomen and spinal column alternately, at intervals of two or three days, and not over ten minutes at any one time, the parts being first moistened by a sponge. Such may be continued, until the nerve centres, recover their tone, which usually occupies from three to four weeks, in ordinary cases. When objections are experienced, the applications may commence on the arms and legs.

Case I. E. G., æt. 58 years of age, of temperate habits, has had indifferent health, for some months, at times depressed and despondent, indications of debility, insomia and irregular appetite. Occasional headache, coated tongue, flatulence and at times a sense of cardiac uneasiness, urine voided in normal quantity, with excess of lithic acid ; these symptoms alternated considerably, just as abdominal functional

disturbance fluctuated. Baths, tonics and diet, prescribed and yet the almost hypochondriac condition continued, until placed under *neurotone* treatment. After three weeks, he was greatly improved in health, and quite equal to his usual official duties.

Case II. Mrs. McQ., æt. 63 years, mother of four children, weight 103 lbs., temperate in every way. Experienced a feeling of general debility, languid, wanting in tone, and in fact, indisposed to undertake any bodily exertion whatever, appetite small, and digestive power feeble. Cardiac action regular, but weak. Muscular system flabby and deficient as to normal tonacity, slight constipation, intestinal flatulence, but no abdominal pain. Sleep only moderately composed. Urine voided in normal quantity, with no presence of sugar or albumen. The indisposition extended over a period of fully two years. June 5, 1898, placed under *neurotone* treatment; as she improved the sensitiveness of the skin became more acute, and in about two months she looked like a different person, active, willing to walk, and without fatigue; appetite much improved; the entire tone of the nervous system was such as not experienced for years previous, and returned to her home in British Columbia, with every hope of many years of increased usefulness.

Case III. Mr. B., æt. 28 years, weight 128 lbs., temperate. Has found of late that he tires readily, and awakes in the morning not sufficiently refreshed. No organic disease. For fully three years, experienced indications of debility, without any special cause except irregularity as to intestinal absorption, abdomen at times considerably distended with gas. Marked palor of face and lips, and an exsanguine condition of the body generally. A peculiar leaden feeling about the abdomen, with a ballooned duodenum. Bowels not regular. No nausea or vomiting. Appetite as a whole good, but the strength and support gained, not in proportion to food taken, evidencing the escape of nutrient material. Urine voided in normal quantity, but overcharged with lithates. About twelve months ago became indisposed, owing to the peculiar feeling in his bowels, which continued until May, 1898, when I placed him under neurotone treatment twice a week for two months, after which the improvement as to his general condition was most marked. Prior to that date, tonics had little effect. At present he can wheel 15 to 20 miles a day, without inconvenience, which he could not undertake for months previous. The tone of the entire nervous system is most marked, and life now most enjoyable.

Case IV. Mrs. F., æt. 78 years, mother of a large family, weight 108 lbs. Temperate. No evidence of organic disease. Muscles thin and

flabby. Functions of the system, regular as a whole. For several years experienced flatulence and constipation, regulated by occasional castor oil. About two years ago, the digestive system, particularly the alimentary canal, was the seat of very considerable irregularity. A degree of general debility followed, attended by marked weakness, almost approaching heart failure, and inability to move about, with accustomed activity. In May, 1898, placed her under *neurotone* treatment, continued twice each week, for a period of two months. At the expiration of that time, markedly improved, as to alimentary digestive power, and the general vigor of her system. Oct. 12, 1898. Moves about her home with the activity of twenty years ago, and now expresses herself as feeling almost youthful once more. This is an illustration of neurons, almost on the shelf, called into action again and becoming useful factors in the promotion of renewed life and activity.

INFECTIVE PERITONITIS, WITH SPECIAL REFERENCE TO A SUGGESTED METHOD OF IMPROVING THE PRESENT METHODS OF SURGICAL TREATMENT.

BY

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The statement that the last twenty-five years have been characterized by marvellous advances in the treatment of abdominal diseases by surgical means has become a truism. Yet it must be confessed that in microbial infective processes involving the peritoneum scarcely any advance has been made toward arriving at a sure and successful method of treatment.

The words of a well-known English surgeon, Mr. Frederick Treves, are worthy of note in this connection. He states that surgical treatment has been most discouraging in acute peritonitis following gangrene, operations and puerperal infection. It has met with but little better results in cases of perforation, in which serous inflammation has been well established . . . while the operative treatment of localized suppurative peritonitis has been remarkably successful. In the case of general diffuse non-tubercular peritonitis there is no record to boast of and little progress to chronicle."

Again he states that he is doubtful if a single human life has been saved by surgical interference in a genuine case of peritoneal toxemia (*i.e.*, the condition in which infective changes in the peritoneum are associated with marked toxic absorption). Statistics as to the deadly nature of infective peritonitis, with whatever condition associated, and both in cases which have been treated medically and those which have been subjected to operation, can be readily furnished by authorities in many countries.

The following may be mentioned in particular: Treves refers to 100 cases in the London Hospital, of which 70 were fatal.

Kaiser notes 30 cases in which operation was performed for peritonitis, following perforation, of which 19 were fatal.

Körte, Mickulicz, and Krönlein have described a number of cases of purulent peritonits, 40 in all, in which operation was carried out, of which 29 were fatal; but it must be noted that of the 11 recoveries

7 occurred in cases where the suppuration was localized. Krecke describes 119 cases operated upon, of which 68 died.

Hawkins, of St. Thomas' Hospital, London, describes a series of 11 cases of diffuse purulent peritonitis, all of which were fatal.

While the above statements will be generally accepted as regards diffuse peritoneal infection, there will be an equal unanimity of opinion that during the last few years considerable advance has been made in the operative treatment of localized infection, this being very largely due to the work of American surgeons. A careful study of well-prepared statistics from different countries will, however, reveal the fact that in even in localized infective suppurative conditions there yet remains a considerable opportunity of diminishing the death-rate in connection with operative procedure.

If, for instance, we take localized inflammations in connection with appendicitis, it will be found that the brilliant results obtained by so many operators have been in cases in which the local conditions have been of a favourable character, but that where infection spreading from the appendix has led to severe localized swellings, associated with suppuration or gangrene, the results have been much less satisfactory. In this relation it is of interest to refer to statistics of operators regarding large numbers of appendicitis cases.

Porter of America gives the following interesting analysis of 448 cases :

Recoveries	371.	
Deaths	77.	
Average mortality	17.23	per cent.
A. Removal of appendix during attack :		
Recovered	120= 80.3	per cent.
Died	29= 19.7	per cent.
B. Removed during quiescence		
Recovered	13= 92.86	per cent.
Died	1= 7.14	per cent.
C. Incision and drainage of abscess :		
Recovered	154= 81.82	per cent.
Died	54= 18.18	per cent
D. Appendicitis without operation :		
Recovered	82= 86.32	per cent.
Died	13= 13.72	per cent.

Hawkins, of St. Thomas' Hospital, London, analyses 264 cases as follows :

	Death.	Recovered.
A. Non-purulent perityphlitis	0	190
B. Purulent perityphlitis	10	28
C. General peritonitis	27	9

Operative treatment to above :

1. Appendix removed once in (*A*).
2. In (*B*) Abscess opened and drained in 33 cases.

3. In (*C*) Abdominal section and flushing in 11 cases. (In 3, appendix removed; all died.)

In all forms of appendicitis treated according to conservative ideas, the mortality was about 14 per cent.

Armstrong, of Montreal, gives the following statistics collected from three hospitals in that city since 1889, regarding 517 cases of appendicitis, with a mortality of 12.8 per cent. Up to July, 1892, they were mostly in medical wards; since 1892, mostly in surgical wards.

In the Montreal General Hospital, from 1858 to 1873, peritonitis is alone mentioned in the hospital statistics. After 1873 perityphlitis had a mortality of 12 per cent.; peritonitis (so-called) a mortality of 20 per cent.

	Deaths.
Total peritonitis and perityphlitis, 1858-1890	152
Pericæcal abscess	2
Perforation of the veriform appendix	1
	155

Mortality during this period was thus about 23.8 per cent., or nearly double that in the succeeding six years.

Of the 517 cases, 228 were non-operation cases, with a mortality of 3.12 per cent., the deaths being entered in the records as due to septic peritonitis.

Three hundred and eighty-nine were operation cases, 84 of which were interval cases and 305 were in the acute stage; mortality, 22.65 per cent. (or 63 deaths).

Of these 63 deaths, 36 were in general peritonitis, 2 in tubercular peritonitis and appendicitis, 18 in abscess (localized), 5 in pyelophlebitis in mesentery and liver, and 2 in pneumonia.

That the important element in infective peritonitis is microbial activity is now practically everywhere believed, and facts are rapidly accumulating regarding this field of pathology. Various micro-organisms have been found associated with peritonitis, of which the most frequent are the bacterium coli commune, streptococcus, and staphylococcus pyogenes aureus, the most frequent being the first named.

Thus Fränkel, in 31 cases of peritonitis, found bacterium coli commune in 9, streptococcus in 7, staphylococcus aureus in 1, pneumococcus in 1, and bacterium lactis aërogenes in 2. In 4 cases he could not find any micro-organisms.

Tavel and Lanz found bacterium coli commune alone in 15 cases, in association in 16 cases; streptococcus alone in 3 cases, in association in 15; staphylococcus alone in 2 cases, in association in 6; pneumococcus alone in no case, in association in 2.

Hawkins found in 61 cases of general peritonitis or appendicular

abscess due to appendix disease, that the bacterium coli commune was present in 57, in 50 cases being the only germ present. This authority states that in most cases of peritonitis due to intestinal perforation the bacterium coli commune is found usually alone.

The predominence of the bacterium coli commune, not in association with other micro-organisms, is of interest, and the explanation in a number of cases may be understood by Barbacci's experiments on animals. He found that when perforating peritonitis was produced artificially this organism alone survived, even though for a time in the early stages of the inflammation other germs might have developed. (In these cases the bacterium coli was found in different parts of the body, *e.g.*, in the liver, spleen, kidneys, glands, etc.)

In cases of hernia different observers have found bacterium coli commune in the sac, in a large percentage of cases; in internal strangulation in the peritoneal exudation. In the latter condition, produced artificially in dogs, Bönnecken found this organism in most cases; occasionally other germs were found. Then in suppuration and ulceration of the gall-bladder is often found the bacterium coli commune, in many cases by itself.

Staphylococci are rarely found alone in peritonitis; generally with more virulent organisms. In puerperal peritonitis the most frequent organism is streptococcus. In peritonitis following abdominal section, streptococcus, staphylococcus aureus and albus are most commonly found; in some cases the bacterium coli commune is found The pneumococcus very rarely causes peritonitis; it is hard to produce an infection with it experimentally in animals.

In regard to the bacterium coli commune, Macaigne states that a culture from the healthy gut is harmless in the peritoneal cavity, and that the organism becomes virulent when there is some disturbance in the bowel wall due to such causes as diarrhœa, constipation, strangulation, etc.; its virulence is increased, if, along with it, there be introduced sterilised fluid from the intestines, sterilised water, ox-gall, or blood.

It has also been pointed out by Treves and others that freshly filtered fluid from the bowel, placed in the peritoneum, causes peritonitis, which is usually fatal; in such a case the bacterium coli commune is the infective agent. If the fluid be filtered through plenty of gauze the effects are less severe. If the fluid be sterilised no evil results follow its introduction into the peritoneal cavity.

Klecki has pointed out that the ileum contains the most virulent forms of bacterium coli, the jejunum the next, and the colon the least virulent.

He has also shown that when artificial compression of a knuckle of bowel is carried out in the dog, leading to fatal peritonitis, the virulence of the bacterium coli taken from the constricted portion is much greater than that of specimens taken from uninjured parts of the bowel. He believes that the state of the epithelium covering the intestine is a most important factor in determining the passage through the wall of micro-organisms.

It is of great importance to bear in mind the variation in virulence of micro-organisms, both in varying conditions in the body, as well as under artificial conditions. Bacterium coli commune, for instance, is found to vary in artificial media, losing its virulence more quickly in agar than in broth. Ekehorn showed that when taken from mild forms of appendicitis it was less virulent than when taken from acute and severe attacks.

In this connection may be noted the observation of Tavel and Lanz, who found this organism in the peritoneal cavity in some cases of localised appendicular abscess without the presence of any peritonitis : and that of Welsh, who found the organism in the peritoneal cavity in some cases of non-perforating ulcers of the intestine.

Next, attention may be directed to the peritoneum as regards its normal functions, and its reaction to infective irritants. It has been shown by Wegner that the surface area equals that of the skin. There is some doubt as to the presence of stomata between the endothelial cells : Clark, in his recent able work, states that appearances which have been described as stomata are really the retraction of the cells at their junctions. Absorption of fluids from the peritoneal cavity probably takes place both by blood-vessels and lymphatics.

Attention has recently been directed to the following interesting experiments of Muscatello. Fine carmine granules in suspension were injected into the peritoneal cavity of dogs. When the dog was suspended head down :

In five to seven minutes granules were found in the retrosternal lymph-glands even before they were visible in the lymphatics of the diaphragm. There was no trace in the pelvic and abdominal lymphatic glands ; at the end of six hours the diaphragm was injected ; in one and one-half hours they were found in the glands of the spleen and liver.

Where the dog was suspended with the head up :

After five and one-half hours no carmine was visible to the eye in any gland. Microscopically, however, it was found in the retrosternal and in the other intrathoracic glands, but not at all in the spleen, liver, pancreas, lumbar, or aortic glands. Muscatello thinks, there-

fore, that the normal course taken by particles of solid matter in the peritoneal cavity, is first through the diaphragm to the thoracic glands, thence into the blood stream, whence they find their way to the glands in various parts of the body.

The current to the diaphragm exists in spite of gravity, though the latter retards it. He thinks that the diaphragm is the only part of the peritoneum capable of absorbing solids from it, the lymph-glands in the mediastinum being the collecting centre. Most granules are carried off by leucocytes which pass into the peritoneal cavity, but it appears that very small particles may pass through the peritoneum without much help.

The peritoneum is normally very sensitive, but the sensitiveness is lost as it becomes altered in inflammatory processes. The following experiments of Reynier and Reichel may here be noted :

1. They poured boiling water or perchloride of iron into the peritoneal cavity of the rabbit, producing marked shock and death within twenty-four hours.

2. The above experiment, when preceded by a nerve sedative, *e.g.*, chloral, always resulted in the animal living twenty-four hours or more.

The reaction of the peritoneum varies according to different circumstances. I desire to refer only to the following :

1. Situation :

It has been fairly well established that the small intestine and omentum are most sensitive to infection, as well as to the rapidly spreading variety of peritonitis.

The parietal peritoneum is considerably less sensitive ; and the liver peritoneum is not very sensitive.

It is not common to find localized or encysted peritonitis in the area of the small intestine apart from tuberculosis, as Treves points out. The localized forms are found almost entirely in the subphrenic region between the diaphragm and transverse colon, in the region of the cæcum, especially in its outer side ; and in the pelvis.

2. Influence of micro-organisms :

Variations are produced according to the nature of the organism, according to differences in virulence, according to the quantity introduced, etc. Consequently it is not surprising that we find as a result of microbial infection of the peritoneum widely different clinical phenomena and pathological changes. Thus we may find little or no illness resulting, with practically no changes of importance in the peritoneum itself ; or, on the other hand, we may find that death quickly occurs, associated with intense toxemia, in the course of a

few hours ; or between these extremes may be found a series of cases varying both in the symptoms produced and in the changes induced within tho body.

Tavel and Lanz have published experiments dealing with the changes produced by difference in dosage. They have shown, for example, how a very slight dose of a given microbe might produce little or no disturbance, while a larger dose produced a chronic peritonitis, more or less localized ; a still larger dose causing a diffuse inflammation and a fatal end ; while a very large dose produced death before any local changes were developed.

The peritoneum is capable of disposing of certain quantities of micro-organisms. Various experiments may be referred to in this connection.

1. Grawitz's :

(*a*) Non-pyogenic microbes introduced into the peritoneal cavity in large or small quantities cause no harm.

(*b*) Large quantities of microbes which ordinarily are harmless, may be able to start a severe peritonitis if the absorptive power of the peritoneum be impaired.

(*c*) In several cases streptococci and staphylococci injected in a watery solution caused no changes.

(*d*) The introduction of the same quantity with a fluid difficult of absorption led to purulent peritonitis ; the same occurred where the peritoneum was injured.

Pawlowsky carried out Grawitz's experiments and obtained similar results.

2. Waterhouse's :

(*a*) Six c.c. of a cloudy culture of staphlyococcus aureus was introduced into the peritoneum of a dog, and death of the animal did not occur.

(*b*) The same quantity, along with 8 c.c. of urine or blood, did not cause its death.

(*c*) The same quantity, with 15-20 c.c. of urine or blood, led to severe peritonitis.

(*d*) Three cm. of the culture, with 3 cm. of blood-clot caused death in twenty-four hours.

(*e*) Two c.c. of staphylococci or 1 c.c. of streptococci from an acute abscess led to death in twenty-four hours.

When similar quantities of these cultures referred to were introduced with plenty of water, the animal usually survived ; when introduced with turpentine there was no peritonitis, but in cases where the peritoneum was first irritated with turpentine and the microbes

then injected, fatal peritonitis then occurred. This authority also found that the presence of ascitic fluid in the peritoneum of the cat favoured death after the introduction of the cultures.

Halsted found by experiment that ligature of the omentum followed by the introduction of infective cultures caused peritonitis in every case.

Regarding immunity in the peritoneum, Treves, Melsome, and others, think that a certain degree may be produced in animals, both local and general, against septic infection.

Treves points out that operations in chronic peritonitis, or after repeated subacute attacks, are less risky than in cases where there has been no previous trouble.

NOTE.—The alimentary tract in its whole extent contains all kinds of micro-organisms. It is thought that they are more numerous in the large than in the small intestine. They appear to be more common in carnivorous and omnivorous animals than in the graminivora.

With reference to the passage of microbes through the alimentary tract and the fate which they accomplish under normal conditions little is known.

It is of interest in this connection to mention Gillespie's experiments. He found that the hydrochloric acid of the stomach is very detrimental to pathogenic organisms. If much food be taken, especially of proteid nature, or if the acid be deficient, there is established the condition favourable to the passage through the stomach of the micro-organisms unhurt.

(To be continued.)

Case Reports.

THROMBOSIS OF CAVERNOUS SINUSES FROM SUPPURATION IN NASAL CAVITIES.[1]

BY

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The patient, a girl of 15, was admitted to the Montreal General Hospital on October 1st, 1898, complaining of headache and weakness.

Two years previously she was laid up for two weeks with rheumatism in the ankle. Enquiry revealed that there had been a purulent discharge from the nose some weeks previously, but there had been no aural affection.

About two weeks previous to admission, the patient began to suffer from headache. She kept at her work for a week, when she took to bed with severe headache, weakness, and, during the ensuing days, diarrhœa.

State on admission.—She is a moderately nourished girl, inclined to be emotional and cries readily. There is intense headache and on moving she holds her hands to her head. The skin is hot and dry, the temperature 101⅖° on admission. The pupils are moderately dilated and equal. The teeth are irregular, the mouth open, and the palate much arched, conditions suggesting adenoids. The tongue is moderately coated. The abdomen gives gurgling in the right iliac and left lumbar region, but there is no tenderness, no splenic tumour or rose spots. The heart and lungs are normal, the pulse 120 small and compressible.

Oct. 2. The temperature has varied from 102⅖° to 105°. In the afternoon the house physician, Dr. Schwartz, noticed that the left eye was somewhat swollen.

Oct. 3. There is marked œdema of both upper and lower lids, more marked on the right side, with distinct proptosis of both eyes. The temperature continues high, and a rigor took place this afternoon, the temperature rising to 106⅗.

Oct. 4. Proptosis increased in both eyes since yesterday. Eyelids are closed, and on the left side they bulge forward to the level of the forehead, and rather beyond it on the right. The conjunctiva of the right is markedly swollen and œdematous, projecting forward through the

[1] Read before the Montreal Medico-Chirurgical Society, November 7th, 1898.

closed lids. On the left side there is slight œdema of the conjunctiva with a sub-conjunctival hæmorrhage. The eyeballs are immobile, the left pupil dilated as before, the right pupil not seen, owing to swelling and inability to open the eyelids. The left optic disc is slightly swollen, its edges blurred and the veins are full. Slight œdema of the forehead between the eyes is present. There is slight fulness of the side of the neck, but no tenderness of the mastoid, and the middle ears are normal. A second rigor occurred during the previous night.

Oct. 5. A third rigor occurred this morning. Œdema over the right temple and right side of face.

Oct. 6. Occasional delirium occurred during the night. Swelling of the right side of the face and neck is well marked, and there are red lines on the forehead along the course of the veins (purulent phlebitis). Before death the temperature rose to 108°.

Anatomical diagnosis.—Septic thrombo-phlebitis of cavernous sinus; suppuration and necrosis of ethmoidal cells, orbits and scalp; acute purulent meningitis; old suppuration in left antrum; small infarct of spleen; cloudy swelling and fatty degeneration of all organs.

Body of a slightly built young girl, with moderate rigor. Marked bulging of right orbit. Veins of forehead above root of nose are prominent and have a varicose appearance.

On removal of scalp, small pockets of dirty grayish pus are found about the right orbit and in the centre of the forehead; another pocket just behind right ear. Each of these contains about a thimbleful of greenish fetid pus, which on examination shows diplococci and a few short bacilli.

Skull cap thin, diplococci scanty; no signs of suppuration about bone or periosteum. Longitudinal sinus free. The pia on convexity is a little œdematous, but not opaque.

Vessels moderately injected. No lymph.

In the left frontal and orbital regions there is a layer of lympho-pus extending from the Sylvian fissure to the anterior extremity of lobe, the pia being much matted. Small hæmorrhagic areas are seen in the cortex beneath. Another pocket of lympho-pus, size of thumb nail, lies on left side of the pons, the adjoining vein being plugged with firm thrombi. Sylvian arteries free. Right Sylvian fissure free from inflammation. At the base of cerebellum is a collection of pus beneath the arachnoid and covering the middle lobe. Ventricles appear free, but on section at level of island of Reil some purulent infiltration is seen to extend along the deeper convolutions. Medulla intact. Grayish-red soft clots seen in lateral sinus, non-adherent, but speckled with whitish points. In the sella turcica, to the right of the pituitary body, is an area of purulent infiltration.

extending in the direction of the cavernous sinus, which is plugged. A similar condition exists on left side, but this is less marked. No signs of old suppuration in frontal sinus. The ethmoid sinus is full of pus and the bones on each side are necrosed. The necrosis also involves the sphenoid wings and the occipital naso-pharynx shows thickening and granulation of mucosa. No adenoids. Turbinated bones show very little change. Left antrum full of pus and a gelatinous looking pulp with some caseous matter. Tissue of both orbits shows purulent infiltration around posterior half of the globe. The right optic nerve is considerably swollen near the point of entrance into eyeball.

Gums and teeth show nothing abnormal.

Heart muscle somewhat pale and opaque. Pericardium ½ oz. clear light-coloured fluid. Valves and coronary vessels healthy. Lungs healthy and crepitant throughout. Colour pale gray. Liver somewhat enlarged, fatty and nutmeg. Intestines and stomach healthy. Cystic ducts patent. Spleen pale, soft and small infarct about the size of a split pea on surface. Pancreas normal. Kidney soft, flabby and pale. Capsule peels readily, surface smooth. Venæ stellatæ prominent. Cortex pale, almost yellowish and swollen. Medulla and pelvis look healthy. Suprarenals healthy. Pelvic organs healthy, except for slight cystic condition of ovaries.

When first admitted the gradual onset of the illness with diarrhœa and headache suggested typhoid ; the headache was, however, much more severe than is usually seen in this disease, and the positive evidences of typhoid, rose spots and Widal's tests, were absent.

The appearance of proptosis and œdema of the lids appearing first on the left, and a few hours later on the right, led to a diagnosis of thrombosis of the cavernous sinuses, beginning on the left side and spreading to the right through the circular sinus, and that its origin was septic, was indicated by the rigors and high temperature.

The origin of the disease was somewhat obscure. The history of nasal discharge suggested some purulent condition in the nasal fossa, although nothing was observed in the anterior nares to confirm such a view.

This case bears a close resemblance to thrombosis of the lateral sinuses, from middle ear disease.

The autopsy showed that the infection had spread from the sphenoidal and ethmoidal sinuses, which were filled with pus, and the analogy is still further borne out by the purulent meningitis at the base of the brain.

The symptoms are very striking—the great œdema of the lids, and

the proptosis of both eyes could only result from this cause. Whilst paralysis of the ocular muscles is usually present in such cases, it seemed impossible to me to state whether the immobility of the eyes was due to this cause or to fixation of the protruded eyeballs by swelling at the back of the orbits.

The œdema of the face, which is absent in pure cases of sinus thrombosis, is satisfactorily explained by the purulent phlebitis of the veins of the face.

MacEwan, in his work on Pyogenic Infective Diseases of the Brain, relates the history of five cases of thrombosis of the cavernous sinuses, one of which was due to infection from an old standing syphilitic ozæma.

Coupland (Trans. of Ophth. Soc., Vol. III., 1887) in reporting a case of cavernous sinus thrombosis, has added twenty-eight others. Of these only one had a distinctly nasal origin, being due to ozæna probably of syphilitic origin. Pus was found in the sphenoidal sinuses.

It would thus seem that suppuration in the nose is a rather rare cause of cavernous sinus thrombosis. The origin is much commoner in suppuration of the middle ear, with thrombosis of the cavernous sinus extending forward. It is occasionally due to suppuration extending from the orbit and from necrosis about the pharynx in scarlatina and diphtheria.

A CASE OF CHOLECYSTICO-GASTRIC FISTULA WITH ACCOMPANYING DIVERTICULA IN THE DUODENUM.

BY

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It is not necessary to point out that there are instances on record in which as a consequence of cholelithiasis the gall-bladder forms fistulous connections with an extraordinarily large number of other organs; intestines, urinary passages or genitalia, the trunk or branches of the portal veins, the bronchi, and the outer surfaces of the body. Of these forms, the gastro-intestinal and the cutaneous are by far the most frequent and important. In the gastro-intestinal, connections between the gall-bladder and the stomach are comparatively rare. Von Schueppel, in his well known article upon diseases of the biliary passages in Ziemsen's Cyclopœdia, merely mentions their rarity, nor have I been able in a rapid review of the literature to come across any statistical table giving the frequency. Apparently very few cases have been recorded, and most recent writers upon diseases of the bile-passages have been content to refer to the older authors, such as Murchison and Courvoisier, without having seemingly met with the condition in their own experience.

Cases of vomiting of gall-stones seem not to have been so infrequent but as spontaneous cure takes place readily, very few have been confirmed by post-mortem examination.

In general the cases in which there are instances of such gastro-intestinal biliary fistula give no history and present no symptoms. The case I am about to narrate presents this feature.

Mrs. M., an aged woman of 85, was admitted to the Royal Victoria Hospital under Dr. Garrow, to whom I am indebted for these notes, with an impacted fracture of the head of the right femur. According to her statement, save for injury to the right shoulder some 20 years ago, she had always until this accident enjoyed good health.

Upon clinical examination, the vascular system was found normal; a few moist râles were heard over the right base below and there was nothing abnormal in the urine. The abdomen was somewhat sunken and the bowels constipated. She became gradually weaker, and a low form of delirium set in. While no special symptom called

for notice, she gradually failed and died some two weeks after admission.

At the autopsy performed eight hours after death, there was little evidence of any inflammation round the seat of the fracture, the neck being found firmly impacted in the head of the bone. The organs in general were light and small presenting advanced senile atrophy. The vessels presented extensive atheroma.

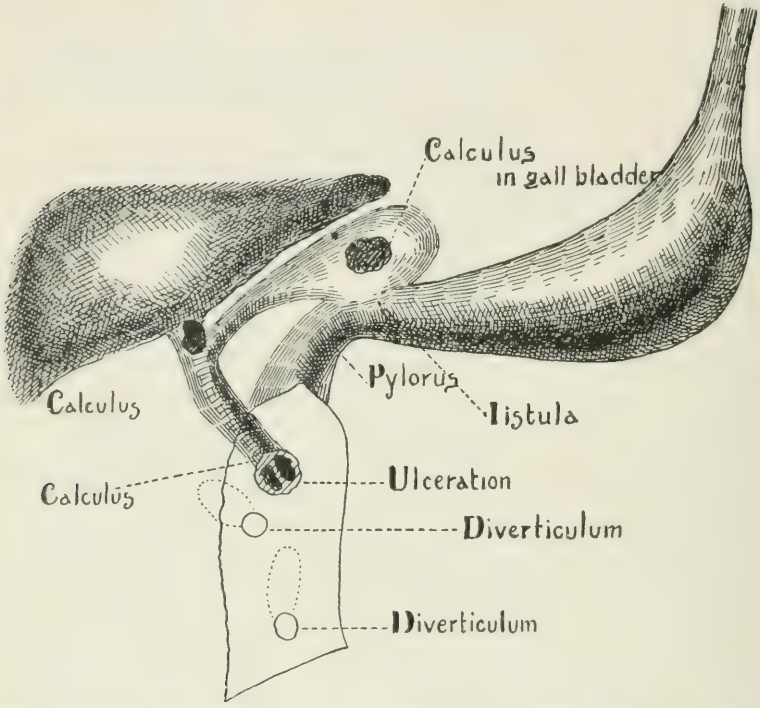
The stomach was long and fusiform with atrophied walls, almost empty. The main feature was the existence of an adhesion between the pyloric region one-half inch from the pylorus along the line of the lesser curvature to the gall-bladder.

The duodenum was deeply congested in the region of the bile papilla. That papilla was absent being replaced by two ulcerous openings leading into the distended end of the common bile duct which was occupied by a mulberry-like calculus the size of a hickory-nut, and much yellowish inspissated bile. To the condition of the duodenum I shall return, only mentioning that the rest of the intestines beyond presenting senile atrophy, were normal throughout.

The liver was small, thin, and flabby, of a dark colour, showing upon section a considerable amount of bile staining. Upon attempting to remove the bile from the gall-bladder in order to make bacteriological cultures, only gas and whitish muco-purulent material passed into the pipette, and for a moment it seemed as though a mistake had been made and that a loop of the transverse colon was taken for the gall-bladder. Further examination, however, showed that between the anterior wall of the gall-bladder, which was considerably elongated, and the stomach, was a fistulous opening large enough to admit a large probe. One small rather mulberry-like calculus the size of a small cherry and of the mixed pigment and cholesterin type was present in the gall-bladder. The cystic duct was distended as was also the common duct. Immediately above the entrance of the cystic into the common duct was a large irregular calculus and the whole common duct was distended the size of the index finger and contained besides the above mentioned calculi much thick gritty yellowish bile.

The duodenum was deeply injected presenting evidence of acute inflammation. Immediately below and anteriorly to the orifice of the common bile duct was a saccular diverticulum about 5.50 centimeters long and as thick as the last joint of the thumb. This consisted of the serous and mucous coats, the muscularis being absent. It contained inspissated faeces. About two inches lower down near the point where the duodenum pierces the mesentery was a second diver-

ticulum directed upward toward the head of the pancreas. The condition of things may be illustrated by the accompanying diagram.



The relative frequency of the different varieties of cholecystic fistula is difficult to settle, there being some difference of opinion among the authorities I have consulted.

Courvoisier has collected ten instances of connections between the ductus communis and the duodenum, and 73 between the gall-bladder and duodenum; 39 cases of fistulous opening into the colon; 184 cases of fistulous connection with the exterior. Naunyn[1] in statistics taken from Courvoisier mentions eight cases of cholecystico-gastric fistula.

Courvoisier accordingly seems to consider the external fistula to be the commonest. Strümpell and Murchison, however, agree that the cystico-duodenal is the most frequent. Murchison in his classical work on Diseases of the Liver[2] gives the following as the order of frequency: cystico-duodenal, external, cystico-colic, cystico-gastric. All authorities agree that the last form is extremely rare. Murchison[3] gives 12 instances in which gall-stones were vomited up, but only one of these cases, that reported by H. Jeaffreson[4] was proved by autopsy to result from gastro-cholecystic fistula. Recently Mayo

Robson had a case in which a gall-stone was vomited up, and the patient recovered[5].

Cruveilhier narrates a case[6] where the fistula between the gall-bladder and the stomach was found closed by a gall-stone.

Oppolzer[7] describes one in which the fistula was close to the pylorus as in the present case.

Frerichs, quoting Baillie and Weber, mentions two cases[8].

Charcot in his important work on the Liver[9] notes Murchison as citing 4 cases of gastro-cholecystic fistula.

Fistulæ between the stomach and bile-passages are, however, not invariably due to gall-stones.

Murchison records a case in which there was a fistulous opening between the dilated bile duct in the liver and the stomach. In this case, which was one of cancer of the liver associated with impaction of gall-stone in the common bile duct, the bile flowed through 3 or 4 rounded orifices in the anterior wall of the stomach, which orifices communicated with the dilated bile ducts and superficial portions of the liver. This was evidently the source of the bile found in the bowels in the stools during life. (Diseases of the Liver, 3rd edition, 1885, p. 419).

Cancer of the gall-bladder has been known to invade the stomach and thus bring about a fistulous communication (Chardel; *Monogr. des dégen. skirr. de l'estomac.* VIII p. 190).

The perforation of a simple ulcus ventriculi into the gall-bladder caused a fistula in a case recorded by Ogle: (St. George's Hosp. Rep. III, 1868).

An attempt has been made to explain the vomiting of gall-stones as due to a retrograde peristalsis of the duodenum forcing the stone back through the pylorus. As, however, the duodenum is so well bound down by peritoneum this seems very improbable and no doubt all cases are due to the presence of an actual communication between the viscera.

With regard to the elongation of the gall-bladder it is difficult to say whether this primarily assisted in promoting the formations of adhesions between the two viscera, or was due to traction. In cases of acute cholecystitis such elongation is known to occur, and even to be associated with a tongue-like projection of the liver downwards (Riedel's sign).

References to duodenal diverticulum seem to be rare. Grawitz in his article on Intestinal Diverticula (Virch. Archiv. 68 Bd.) does not mention them.

Intestinal diverticula have been divided into true and false. The

true consist of sacs, the walls of which are composed of all the coats of the bowel, and are usually congenital. Of these the well-known Meckel's diverticulum is the type. According to Orth congenital diverticula may occur in the duodenum. The false diverticula are those in which one or more of the bowel coats are wanting. Often the muscular coat is absent and the diverticulum is really a hernia of the mucosa; or the serosa may be the only constituent. Such are due to pressure exerted on a weak bowel. The sac is often but not invariably situated between the layers of the mesentery, while the congenital form is situated away from it.

Hansemann[10] records a case in which there were 400 diverticula in the intestine, varying from the size of a hemp-seed to that of a pigeon's egg. A few were in the duodenum. On closer examination these were found to be herniæ of the mucous membrane into the sheaths of the mesenteric veins, the muscularis being absent at the point where they enter the bowel. That these points are the weak spots in the bowel can be readily proved by pouring water into the intestine to distend it when numerous little diverticula at these sites may be artificially produced. Powell White[11] in an article on anomalies found in the post-mortem room records a case in which there were two pouches in the duodenum, one at the side of the bile papilla.

In the present case the diverticula consisted of the serosa alone, and were clearly due to pressure acting upon the inflamed and weakened duodenal wall.

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Digest.

By J. C. Webster, M.D.

Physiological and Pathological Relationships between the Female Sexual Apparatus and Other Organs of the Body.

H. W. Freund. "Die Beziehungen der weiblichen Geschlechtsorgane in ihren physiologischen und pathologischen veränderungen zur anderen Organe."—*Ergebnisse der Allgemeiner Pathologie, etc.*, Lubarsch and Ostertag, 1898.

Introductory.

In most published works dealing with this subject, very little attention has been given to its consideration from the anatomico-physiological standpoint. P. Müller was the first to collect various scattered articles into one monograph, published in his *Handbuch* in 1888. Eisenhart, in 1895, wrote a similar comprehensive work. It has been generally believed that the main link between the genitalia and other parts of the body through which inter-relationships are established is the nervous system. As a result of Goltz's important experiment, however, many now think that the blood-stream is a more important factor than the nerve chains. (This experiment consisted in the division of the spinal cord of a bitch at the level of the first lumbar vertebra. Afterwards signs of "heat" developed and, on being covered by a dog, the bitch became pregnant; labour followed in due course, one living and two dead puppies being born. Lactation and suckling took place as in normal cases.)

It is evident that as the connection between the central nervous system and the genitalia was broken in this case, the various pelvic phenomena must have depended for their occurrence upon other agencies. Goltz suggested that the sexual phenomena during "heat" are due to the influence on the central nervous system of secretions poured into the blood stream from active cells in the genital tract. This, indeed, is the forerunner of the modern "internal secretion" hypotheses. The likelihood of the ovarian secretion being an important influence in the body is becoming more certain every day, and it is supposed by many to be the chief factor in determining the distinctive female characteristics. Virchow has said that "all the peculiar physical and psychical characteristics belonging to women depend upon the ovaries." If there be a labour centre, it must exist in the lumbar

region of the cord, judging from Goltz's experiments. Schlesinger's experiment in this direction is interesting. He divided the cervical spinal cord in a bitch, and on stimulating the sciatic nerve produced uterine contractions. There is little support for Koerner's view that a labour centre exists in the brain.

It is impossible, however, at present to state exactly what part is played either by the blood or nervous system in determining the changes brought about in the body during normal or pathological reactions between the genitalia and other parts.

W. A. Freund believes, for example, that the turgescence of the breasts in pregnancy and the puerperium is to be related entirely to blood-conditions. He thinks that the pressure of the pregnant uterus on the large vessels causes an interference with the circulation which leads to congestion in the breasts and to their increase in size. The marked development after delivery is due to the contracted condition of the uterus, whereby a large quantity of blood is forced into the general circulation.

H. W. Freund holds a similar view, explaining thereby the changes in the thyroid in pregnancy. He thinks, however, that the nervous system is an important factor. Thus by irritating the breasts of a pregnant woman with the cathode of a constant current, he started labour-pains. On the other hand by intra-uterine electrical stimulation in cases of myoma uteri he was not able to produce swelling of the breasts or erection of the nipples.

From the pathological standpoint also, evidence is accumulating as to the importance of the blood as the important factor in correlating the genitalia with the rest of the body. In his well-known work on chlorosis, Virchow has shown that a considerable number of cases in women are associated with defectiveness in the aortic arterial system, *e.g.*, narrowness of the lumen, thinness of vascular walls, anomalous origin of branches and irregular thickenings of the intima. Along with these conditions occurs, in a considerable number of cases, defective development in the genitalia, though in some instances an excessively well-marked development may be found. W. A. Freund has pointed out that defective circulation and heart disease are not only often associated with a general aplasia of the genitalia, but that there may sometimes be an actual arrest of development leading to a continuance of the infantile condition. H. W. Freund states that it is common to find in connection with aplasia of the genital tract imperfect development of the heart, *e.g.*, small size or patent *foramen ovale*, badly developed stomach, elongated vermiform appendix with large opening into the cæcum, abnormalities in bladder and kidneys.

I.—The relationships between changes in the female genital organs and the circulatory system.

A. The Blood.

1. *Physiological.*—About the state of the blood during menstruation and its relationship to body metabolism very little is known. We are better informed with regard to pregnancy and the puerperium.

Spiegelberg and Gscheidlen found that in the pregnant bitch the quantity was increased after the middle of pregnancy, all the elements being multiplied, not the watery part only.

In the human female the increase in quantity along with diminution in specific gravity has been noted by several, Nasse's work in this connection being especially valuable. This authority found that the average sp. gr. of a number of non-pregnant women was 1055.3. In 67 pregnant women at the beginning of the sixth month it was 1052, at the end of the eighth month 1049.7, in the ninth month 1051.3. In 10 women in labour it was 1053.3. The sp. gr. of the blood-serum was also diminished in pregnancy, due to the diminution of albumen. Becquerel and Rodier calculate the increase of the watery element to be 7-10 per mille.

Andral and Gavarret have stated that in the first six months the fibrin elements diminish, but later, especially in the last month, increase considerably. Nasse in an important research has endeavoured to explain this by showing that the increment is made up from degenerated white blood-corpuscles, which are also increased in pregnancy. He has also shown that there is a diminution in the saline elements and hæmoglobin, and an increase of fat. Nasse regards the blood changes as dependant upon the increased metabolism in the body, this being related to a diminution in activity of the sympathetic nervous system.

The diminution of red blood-corpuscles and hæmoglobin during pregnancy is well recognised.

The pulse is not influenced by pregnancy, the sphygmograph detecting nothing abnormal. R. Barnes has, however, stated that the rate is diminished. He and F. Barnes have tried to show that there is increased arterial tension.

The influence of labour on the condition of the blood is not easy to understand. The sp. gr. of the blood serum remains normal, the fibrin element increases, the hæmatin is greater, the red blood-corpuscles decrease in number. That the blood-pressure is increased seems certain. After labour the latter falls; it is especially low on the third day. Barnes states that in febrile conditions in the puerperium vascular tension increases; Lebedeff disputes this. An increase in

blood pressure in the early days of the puerperium is rare. This is noted, however, when the woman first rises.

The red blood-corpuscles increase rapidly after labour, especially during the first three days, so that after a couple of weeks they are more numerous than in pregnancy. The characteristic feature of the pulse in the puerperium is its slowness: the cause of this is unknown.

2. *Pathological.*—Chlorosis and anæmia are important in their relationship to the sexual organs. Mention has already been made of Virchow's work which showed that a number of chlorosis cases presented abnormalities of the heart and vascular system, with which were associated aplasia of the genital organs, or sometimes excessive development. The chief feature of chlorosis is deficiency in the blood especially aplasia of the red corpuscles.

In the cases to which Virchow has called attention, where the physical conditions are congenital, there may be few or no symptoms until puberty; then the chlorotic features may become suddenly or markedly established. Afterwards there tends often to be an exacerbation of symptoms in connection with altered sexual conditions, *e. g.*, menstruation, puerperium, etc. Cases of acquired chlorosis are most frequently met with at the time of puberty. Von Niemeyer believes that prematurity of puberty is an important cause. He states that it was of constant occurrence in girls in whom menstruation developed early before the breasts or pubic hairs had become prominent.

The special association of chlorosis with menstruation, pregnancy, the puerperium or the lactation-period has been often remarked. In this connection, however, must be remembered the normal thinning of the blood in pregnancy. Von Noordens regards chlorosis as a disturbance of the blood-forming organs resulting from some weakening of the influence of the ovaries, which, he says, act in stimulating blood-formation. Such a view would be somewhat in keeping with the theory of the value of ovarian secretion, but it could scarcely apply to the Virchow group of cases.

The menstrual phenomena vary greatly in chlorosis. Schulze found in 165 cases only five in which menstruation was normal; in four it had never been present; in seven it had been regular, but had become irregular: in three it was profuse and too frequent; in ten there was complete amenorrhœa; in the majority it was scanty and irregular. The explanation of these differences is probably to be found in the varying relationships of the genitalia to the factors causing the chlorosis. Thus, if aplasia of the sexual apparatus and of the main vascular trunks be often found together it is not surprising that scanty and irregular menstruation should be found in so many cases.

Leucorrhœa of a non-inflammatory nature is very common in chlorosis. In amenorrhœa it may sometimes be regarded as a kind of substitute for menstruation.

In some cases it is of a catarrhal origin, for in chlorosis a catarrhal process may occur in different parts, especially in the bowel.

The following aplasic changes may be found in the pelvis in chlorosis:—Kyphotic or justo-minor bony pelvis, associated with deformed spine; thin mons veneris and labia; small vagina with very wrinkled walls; small thin-walled uterus with narrow cavity; small ovaries and tortuous tubes; persistent urachus; small rectum. Excessive menstruation with chlorosis is probably found in those cases in which there is excessive development of the sexual apparatus (Trousseau's "Menorrhagische Chlorose"); the ovaries are especially enlarged.

The influence on the blood of pelvic tumours, *e. g.*, ovarian, is not thought to be more marked than in the direction of causing leucocytosis. Kopp found this constant in a number of cases of simple and malignant growths, but not where the growths were of tubercular origin. Variations occur in chlorosis relating to sterility. Conception may occur, but very often it does not. Probably most of the latter cases are those in which genital aplasia is found.

Pregnancy usually leads to an increase of the chlorotic symptoms. Sometimes it may cause abortion, probably owing to death of the ovum from imperfect nutrition, but, of course, other causes may be present.

Labour pains are not apparently altered. Bad post-partum hæmorrhage may, however, be met with.

Marked anæmia or even pernicious anæmia may develop in pregnancy without apparent cause; the trouble tends to increase as pregnancy advances. In 25 cases described by M. Graefe, only one was cured, two became somewhat better after labour, but most died within ten months of the beginning of the illness. P. Müller has reported three cases of recovery.

Pregnancy may be interrupted, possibly by the action of the excessive carbonic acid in the blood on the labour centre. P. Müller has described a case in which death occurred on the sixth day of the puerperium; fatty heart and liver were found and ulceration in jejunum, rectum and descending colon.

An ordinary anæmia may take on a pernicious character during pregnancy. Indeed pregnancy is the most important causal factor in pernicious anæmia. Multiparæ are more apt to be subjects than nulliparæ. Most deaths occur after labour, one-half taking place within five months. It is rare that life lasts for two years. P. Müller believes that the lactation-period is a prominent causal factor.

Leucocythæmia is a condition which may be started in pregnancy. According to Vidal this is so in 40 per cent. of cases. The early symptoms develop towards the end of pregnancy or in the puerperium. The influence of pregnancy, labour and the puerperium on the course of a leucocythæmia appears to be slight.

Hæmophilia, a rarer condition in women than in men, may develop in pregnancy. Virchow believes that many of these cases, like those of hæmorrhagic chlorosis are explained by the increased blood-pressure associated with deficient arterial capacity. Schönlein states that in cases of hæmophilia, menstruation develops early This is only occasionally so, but when the process is established the bleeding tends to be sometimes profuse. Usually, however, menstruation runs a normal course. A protracted climacterium, marked by profuse bleedings is not rare. Very little is known as to the influence of hæmophilia on the course of pregnancy. A tendency to abortion has been described by some observers. There may be, however, very bad post-partum hæmorrhages.

Scorbutus (purpura hæmorrhagica, morbus maculosus *Werlhofii*, hæmorrhagic diathesis) is often associated with early menstruation or with a prolonged duration. It may cause severe post-partum bleeding, not to speak of hæmorrhage from other parts of the body. Philips states that abortion and premature labour are common. The condition usually lasts throughout pregnancy, though cure may take place before it is ended.

Virchow states that in the post-mortem examinations of cases of the hæmorrhagic diathesis, he has found the diminished arterial capacity as in cases of hæmophilia

B. The Heart.

1. *Physiological.*—That the heart hypertrophies during pregnancy is now well-established, having been first of all most accurately determined by W. Müller's careful researches. The increase is more marked in the left than in the right part of the organ.

Duroziez states, as a result of the examination of many pregnant women, that the heart is larger in those who have had a good many children than in those who have borne only one or two. Gerhardt declares, however, that these results, obtained by percussion, are not to be trusted, owing to the displacement of the heart resulting from the abdominal swelling. W. Müller regards the increase in the heart as due to the increased vascular area in the pelvic organs containing an increased quantity of blood. Cohnstein regards the thinning of the blood as the chief cause, bringing about changes similar to those found

in many cases of chlorosis. Lahs insists upon the importance of the abdominal distension compressing the vessels and thus somewhat interfering with the blood-flow. That the action is a mechanical one, in the main, at least, is likely from the fact that the hypertrophy is most marked in the left ventricle. Besides hypertrophy there is also some dilatation. Fitsch points out that this is marked in both halves of the organ. The changed condition of heart affects the pulse.

Graves has pointed out that alteration of bodily position in cardiac hypertrophy is not associated with any alteration of the heart-beat. Similarly, Jarissenne states that in pregnancy the pulse rate remains the same in all positions of the body and he regards this as a sign even of early pregnancy.

Löhlein states that heart murmurs are found in 68 per cent. of lying-in women, Fritsch in 75 per cent. They are usually heard as soft or blowing in character, systolic, and heard at the base or apex. They usually disappear in the second week of the puerperium.

2. *Pathological.*—Disturbances of the sexual system may bring about cardiac symptoms, without inducing any organic changes. The well-recognised "palpitation," while often developed reflexly through the nervous system, is in many cases due to the influence of altered blood and circulation, conditions resulting from abnormal ovarian secretion.

Clément has classed these cardiac disorders of the climacterium under the term "*Cardiopathie de la ménopause;*" they include palpitation, pallor of skin, œdema of the lower extremities, dyspnœa, fainting, and chest pains.

This author regards them as due to reflex nervous influences stimulating the acceleratory fibres of the heart. Freund discards this view in the light of Goltz's experiments.

In *myoma uteri* similar cardiac disturbances are met with especially in conditions in which the patient becomes anæmic; here undoubtedly the increased size of the uterus has some influence analogous to that of pregnancy. C. Hennig has reported several cases in which the cardiac symptoms disappeared after shrinkage or disappearance of the myoma.

Endocarditis is of the greatest importance in relation to changes in the sexual apparatus. Pregnancy and the puerperium are states which may undoubtedly influence the development of endocardial trouble, especially in the valves. In pregnancy these are the factors of dilatation and hypertrophy and continual increase of resistance in the blood-current. Indeed, without other factors, congenital or acquired, *e. g.*, infective agencies, it is not difficult to believe in the

development of a true "Pregnancy Endocarditis." Should such factors come into operation it is all the more easy for this grave condition to start. Among these factors are to be included vascular aplasia as described by Virchow. It is doubtful if a rheumatic endocarditis occurs in the lying-in woman. At least, it occurs but rarely. Exposure to cold is but seldom succeeded by endocarditis.

Ollivier has recorded three cases of the disease in lying-in women, in which no causal condition could be established save the systemic changes associated with the puerperal state *e. g.*, hyperinosis of the blood. According to this author the mitral valve is mostly affected. In pregnancy trouble is especially apt to occur in the second half of pregnancy.

The change which occurs in the valves is at first generally a parenchymatous one; this is followed by the deposition of fibrin on the surface which may form verrucose and polypoidal masses. There is little tendency to fibrous thickening or sclerosis in the valve, but rather ulceration, softening and breaking-down. In this way embolism is very common especially in kidneys, spleen and in the choroid and retina of the eye.

The infectious form of puerperal endocarditis is caused by organisms which enter the system by the genital tract and is usually found along with infective processes in the pelvic organs. When associated with the diphtheritic and phlegmonous forms of pelvic inflammation, there is a marked tendency to embolic changes accompanying the valvular disease.

Virchow has published a very complete account of a case of puerperal ulcerative endocarditis. The *sectio* was made 45 days *post-partum*. On one of the flaps of the mitral valve was a perforating ulcer with ragged edges, containing badly staining tissue showing fatty degeneration, and thrombotic particles. There were excrescences on the neighbouring endocardium and *cordæ tendineæ*. Hæmorrhagic infarcts and abscesses were found in spleen and kidneys. In the valvular ulcer, myocarditic areas and embolic masses were found, felted masses of fine threads, consisting of low fungoid organisms (Pilzkolonien). This was the first case of ulcerative endocarditis in which the demonstration of the causal organisms was made. It has been shown that the organisms are in most cases streptococci, though staphylococci and the pneumonia-diplococci may sometimes be the active agents.

The Berlin Pathological Institute publishes the following statistics regarding endocarditis in the lying-in woman for the years 1865-1876. There were 63 cases (18 per cent. of all the autopsies made in lying-in

women; 85 per cent. were acute cases. The verrucose form was the most common; the ulcerative was found in 17 per cent. of the cases; the mitral valve was most frequently affected; the left side of the heart far more often than the right; simultaneous joint affections were found in five cases. Parasitic action was found in 60 per cent.; in 40 per cent. there were no infectious processes in other organs; parenchymatous nephritis was found in 56 per cent. Embolism was very frequent. In 11 ulcerative cases it was constantly present.

Old standing valvular disease is very apt to become worse as a result of pregnancy. The vegetations on the valves tend to grow larger and new ones to be formed. In girls with this disease the onset of menstruation tends to be delayed. Duroziez has described 27 cases in which the age of commencement varied from 17 to 23. When heart-compensation is well established the process is usually normal. In mitral disease it may be profuse. When compensation is disturbed, menorrhagia and meteorrhagia may be present.

In aortic disease the flow is irregular only in advanced stages; it is not usually profuse. Amenorrhœa is rare save when the system is much worn and exhausted.

Endocarditis does not seem to interfere with conception. The influence of the disease on the state and course of pregnancy is not a certain or constant one.

There is undoubtedly a tendency to premature expulsion of the ovum, following irregular heart-action, congestion in the pelvic vessels especially in the uterine, and disturbances of respiration. The direct factors are stimulation of the labour centre by excessive carbonic acid in the blood, hæmorrhage in the decidua or placenta. Old statistics regarding the frequency of premature delivery are not reliable, owing to the small number of cases referred to. Thus Peter refers to 36 cases, in which 17 abortions and 12 premature births occurred; Duroziez found 21 abortions among 41 cases.

P. Müller, however, from a comprehensive study states that one-fourth of the pregnancies do not go to full term. Hæmorrhages during pregnancy have been described as frequent by Duroziez, but not by other authors.

Endocarditis *per se* does not seem to influence the uterine contractions during labour. Loss of blood producing atony is very rare. Danger is due to cardiac insufficiency and is greatest in or immediately at the end of the third stage. The puerperium may often run a perfectly normal course.

The influence of child-bearing on the course of an endocarditis is not a constant or certain one. Lebert, Spiegelberg, Macdonald and

Hart have emphasized the danger of marriage to a woman with this disease. Middleton, Vinary and Gow have, however, collected a considerable number of cases where patients suffered in no exceptional manner.

Leyden states that at least one-fifth of all cases have a fatal end soon after labour. There can be no doubt that all the conditions introduced by pregnancy tend to make the state of the diseased valves worse.

Death in pregnancy is rare. The danger-period is at the end of the labour and in the course of the puerperium. It is easy to understand how the endocarditis itself along with the increased circulation, the elevated diaphragm, the respiration difficulties present during pregnancy, lead to after-trouble, *e. g.*, dropsies, degeneration of heart-muscle, œdema of the lungs and to secondary nephritis.

Labour introduces increased mechanical difficulties in the shape of alterations in blood-pressure accompanying the action of the uterus and accessory powers. Death, however, during labour is rare. When it occurs it is probably due to over-distension of the right auricle.

The chief danger of the post-partum period, according to Fritsch and others is due to the great alteration in intra-abdominal pressure whereby the enlarged heart is left with too little blood which is mainly in the abdominal vessels.

Mitral stenosis is the most dangerous valvular disease and often leads to death immediately after labour. Berry Hart reports eight cases in which seven deaths occurred. With the various forms of endocarditis it is important to remember that an important complication is usually present in an altered myocardium. Pregnancy and the puerperium strongly predispose to degeneracy in the heart-muscle. The hypertrophy of the former state is followed by an involution in the latter.

What the latter process is, is not definitely known. It corresponds to what takes place in the uterus in the puerperium.

In puerperal septic processes, myocarditis is very apt to occur with or without ulcerative endocarditis. Sometimes the heart is affected in this way without any septic changes in other parts.

Brown atrophy of the heart-muscle has been described as an important form of degeneration in the myocardium, especially by Curbelo and Hofmeier. This atrophy is especially apt to occur in conditions leading to prolonged and excessive heart action. Thus it may be found in cases of large fibroids, especially of the hard variety and of large ovarian tumours. (In the former the prolonged use of ergot has been blamed for the degeneration, but it may occur where this drug is not used).

Fatty degeneration of cardiac muscle is more common than brown atrophy. This may follow an endocarditis or may be part of a septic process. But it seems also to be associated with a similar change in other organs which is found in connection with pregnancy and the puerperium *e. g.*, in skin, breasts, muscles, pelvic cellular tissue, vessels, etc. Virchow was the first to suggest the physiological nature of fatty change in the heart in connection with the puerperium.

Marked fatty degeneration is apt to be induced in prolonged or difficult labours, chloroform anæsthesia, febrile or infective states and excessive blood-loss. Hauber found in *post-mortems* of such cases acute myocarditis, with fatty changes and interfibrillar deposition of pigment. This author states that heart-degeneration follows upon prolonged abortions or other conditions leading to loss of blood and anæmia.

In connection. also, with ectopic gestation a degenerated myocardium may be found.

Sometimes in cases of sudden death in the puerperium, fatty degeneration of the heart may alone be found to account for it. P. Müller Philipps, McClintock and others have described instances of this.

In long-standing large fibroids of the uterus, fatty as well as brown atrophy of the myocardium is met with. There is much less tendency to these changes in ovarian tumours. But it is important to note as Fenwick has pointed out that all large abdominal swellings by interfering with the lungs and leading to imperfect oxygenation in the blood tend to cause fatty degeneration in various organs. This author describes 16 cases of ovarian tumours in which death occurred suddenly, fatty degeneration of the heart, being apparently the cause.

A number of authors have found the same cause in cases of death in fibroids, especially after operations, and as Hofmeier states it is likely that cardiac degeneration is the cause of many post-operative deaths which are attributed to "shock."

One striking condition in emphasizing the close relationship between the genital tract and the circulation is embolism of the pulmonary artery. This is a very dangerous occurrence and is usually fatal. The changes in the blood as a result of pregnancy undoubtedly explain the formation of the embolus.

These changes are of more importance in this connection than the difficulties of circulation in pregnancy, dilatation of large veins, thrombus-formation at the placental site or changes in blood-pressure. Heart disease and degeneration greatly increase the risk of embolism. Lebert has emphasized the special tendency to this condition in the second-half of pregnancy. Playfair and others have mentioned the

occurrence of thrombosis in the right side of the heart, but this is not clearly established.

In certain diseased conditions of the genital tract, there is also a change in the blood disposing to embolism, especially in prolonged troubles leading to impoverishment of blood *e. g.*, long-standing increasing myoma uteri, ovarian tumour, old and marked displacements of the uterus, and conditions associated with extensive adhesion-formation. In this connection must also be considered operative procedures, anæsthesia, rough manipulations, as causal factors.

Of all the causes of embolism, no matter in what conditions, infective processes are the most important. A marked example of this form is the multiple embolic changes found in the pyemic form of puerperal sepsis.

A special form of embolism viz., air-embolism must also be considered. This may be caused during manipulations in the genital tract during labour. The air enters the circulation through a vessel in the placental area in most cases and is most likely to occur in placenta prævia. It has been described, also, in connection with abortion.

Another form is fat-embolism, which may occur in pregnancy, but chiefly in labour or sometimes soon afterwards. Virchow was the first to show that in eclampsia death may be due to fat-embolism in the lungs. He found the same process in the kidneys and occasionally in the brain. The fat probably comes from the liver, possibly from bone-marrow; it may, however, originate in the subcutaneous cellular tissue which in the convulsions of eclampsia may suffer contusion. The tendency to fatty changes in pregnancy, already alluded to, should be remembered in this connection. As regards the liver as a source of the emboli, it is not hard to understand how it might be forced into the thin-walled hepatic veins. The uterus also may be a source, for fatty material could easily pass into the sinuses as a result of uterine contractions or manipulations.

(To be continued.)

RETROSPECT

OF

CURRENT LITERATURE.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

The Use of Egg Membrane in Trephining Operations upon the Skull.

FREEMAN. "The use of egg membrane in trephining operations upon the skull."—*Annals of Surgery*, October, 1898.

The development of cicatrical tissue and the formation of adhesions have been among the unfortunate sequelæ of operation upon the brain and its membranes. Keen suggested the inversion into the trephine opening of a pedunculated flap of periosteum obtained from the adjacent surface of the skull. The manœuvre, although ingenious, is troublesome and not altogether satisfactory.

The most popular method consists in the introduction of some foreign substance, such as gold foil or rubber tissue, but observation has shown that both of these materials may become surrounded by connective tissue, which give rise to more extensive adhesions than would otherwise have occurred. Even the heavier varieties of foil are apt to crack and break into smaller pieces. Rubber tissue also becomes disintegrated. The lining membrane of an egg is exceedingly tough and compact. It is so remarkably durable that it has been employed to close perforations in the tympanum, where it often remains intact for months.

Freeman has tested its efficiency by two reported experiments. He assumed that in a fresh egg the membrane would be sufficiently aseptic.

In his first experiment a trephine opening was made in the skull of a dog, the membrane cut away and the brain lacerated. A newly laid hen's egg was scrubbed and sterilized in bichloride of mercury. The shell was then cracked and peeled from the underlying membrane over a sufficiently large area. A portion of egg membrane was

removed with sharp pointed scissors, and inserted in the opening, the scalp being closed above it. Five weeks after the operation the animal was killed, when the egg membrane was found to have remained intact, in spite of the fact that the dog had infected the wound by scratching. A second experiment, similar in detail, was performed upon a rabbit. The animal was killed and the parts carefully examined at the end of two months. There was absolutely no adhesion of the scalp, even the deep fascia being freely movable over the trephine opening. The brain which presented a yellowish nodule at the point where it had been freely lacerated, was smooth and non-adherent, except by a few delicate adhesions round the edge of what had been the opening in the dura. There was no deposit of cicatricial tissue anywhere about the site of the operation.

Removal of Biliary Calculi from the Common Duct by the Duodenal Route.

McBURNEY. "Removal of biliary calculi from the common duct by the duodenal route."—*Annals of Surgery*, October, 1898.

Dr. McBurney has performed this operation six times and is well satisfied with the results.

When a stone is situated at the extreme lower end of the passage, and when it cannot be dislodged to a place higher up in the duct, its removal without opening the intestine is a matter of great difficulty and not a little danger. The only objection to this method is the fact that the intestine must be incised. On the other hand it is now well-known with what rapidity and perfection properly sutured intestinal wounds heal. Dr. McBurney has found no difficulty in finding the opening of the duct and in dilating it sufficiently to remove the stone. It has also the advantage that, by the introduction of a probe, the bile duct can be examined for a long distance upward toward the liver, and also the orifice of the duct having been dilated to a large extent, there is far less likelihood that over-looked fragments of gall-stone, granular material, or thick bile will be retained and give rise to to further obstruction.

Tetanus.

MIXTER. "Tetanus."—*Boston Medical and Surgical Journal*, October 6, 1898.

Dr. Mixter reports a case of tetanus occurring in a boy eleven years of age. While walking in the woods he cut his foot on a piece of broken bottle. Free bleeding ensued and the wound was dressed by a physician. Eight days later he complained of pain across the

shoulders, and later in the day of a similar pain in the side of the neck, preventing chewing but not swallowing. On the 10th day after the accident he was admitted to the Massachusetts General Hospital. While being examined he had two tetanic spasms.

The main points of interest in the case are that during the following twelve days he was given 3,400 cc. of Gibier's tetanus antitoxin. On the second day of his stay he was given 540 cc. of serum injected deep into the thigh muscles, in divided doses, and on several subsequent occasions 480 cc. were injected at one time. Anæsthetics were often required to control the convulsions. Chloroform was found too depressing to the already over worked heart and ether was found to be more satisfactory. The boy recovered.

It would seem from this case that large doses may succeed when smaller doses fail.

Evidence is accumulating which shows that it is good practice to administer an inhibitory dose in the case of wounds likely to be followed by tetanus. This is at present the routine plan adopted in the Montreal General Hospital. Of course, if tetanus does not develop subsequently, it can not be said that the serum prohibited, but in some cases, for instance, street car injuries with street dirt deeply imbedded in the torn tissues, cases in which tetanus does not infrequently follow the subsequent course of the case after a protective or immunising dose of the tetanus antitoxin, has been satisfactory. The latest researches into the poison of tetanus go to show that it forms with the nerves an indisoluble union, probably a chemical union, and that this union can hardly be broken. The tetanus antitoxin is capable of neutralising any tetanus poison which is free in the system, that after it has united with the nerves, the antitoxin is incapable of separating the union formed. If these views are correct, they would explain the much greater efficiency of protective than curative doses, and clinical experience harmonizes with this theory.

The antitoxin should be given hypodermically, because it is not absorbed when administered by the mouth or rectum. It is advisable to heat it to 1°F. above the rectal temperature before administering it.

Les Tumeurs du Foie.

Tessier et Auvray. "Les tumeurs du foie."—*Revue de Chirurgie*, 10 septembre, 1898.

In this paper are reported 40 cases of tumours of the liver treated surgically. It is the concluding article of a series which has appeared, but which cannot be profitably reproduced without the illustrations.

The conclusions arrived at are as follows :

Of the 40 cases two were treated by establishing a palliative fistula, through the gall-bladder, to relieve symptoms due to pressure of the tumour upon the ducts. Relief of pain and subsidence of fever followed the operative interference in one case and the patient lived three months, the other patient died of shock.

In 38 cases complete operation was performed. The lesions were : 4 sarcomas ; 7 carcinomas, considered to be primary ; 1 carcinoma, secondary ; 6 adenomas ; 4 angiomas ; 3 tumours, the nature being undetermined ; 9 gummata ; 4 non-parasitic cysts.

Of these 38 operations, 32 recovered and 6 died from the operation.

The cause of death in the 6 fatal cases was hæmorrhage, septic infection and shock. Increased experience and an improved technique may be expected to lessen the number of deaths from operation.

In regard to ultimate results, the benign cases gave most favourable after-histories.

The malignant tumour, after a respite of a few months, recurred.

After resection of a portion of the liver, the cut surface quickly becomes adherent to the omentum and neighbouring organs, chiefly the stomach and duodenum.

Ponfick found in experiments upon animals that the liver soon regained its normal size and weight. There seemed to be a regeneration of liver cells.

Geo. E. Armstrong.

Gynecology.

UNDER THE CHARGE OF F. A. L. LOCKHART AND J. C. WEBSTER.

Effect of Gynæcological Troubles upon the Nervous System.

CURRIER, A. F. "Clinical phenomena relating to the nervous system in connection with diseases of the pelvic organs."—*Amer. Gyn. and Obstet. Journal,* July, 1898.

Robt. Lee demonstrated by dissection that the uterine nerves enlarge during pregnancy in spite of the contrary opinions held by both of the Hunters. The female genitals are abundantly supplied with nerves from the sympathetic system which is connected to the cerebrospinal nerves by branches. The sympathetic centre for the uterus is in the aortic plexus, from which is derived the hypogastric which sends branches to the bladder, uterus and vagina, and, by its connections, to the descending colon, sigmoid flexure and rectum. The centre for the ovaries and tubes is in the spermatic plexus, which arises from the aortic and is connected with the renal. Through this, it is connected with the solar plexus and thus to the heart, lungs and stomach. Having shown the intimate relationship between the sexual organs and those of the alimentary, cardiac, respiratory and other systems, it is easy to understand how organic disease of one may produce symptomatic effects in the other, as is seen in the dyspepsia which so often accompanies disease of the genital tract. Other influences may aid the genital disease in producing these symptoms, as for instance, the various habits, *i. e.*, alcoholic, drug, etc., unusual occurrences etc., and the difficulty of deciding which exerts the most powerful influence is often great, while, on account of the intimate nervous relation between the genital organs and the rest of the body, temporary "disturbance of mental equilibrium" not unfrequently follows operations upon the uterus and appendages, cases of post-operative actual insanity are very rare, Tait only finding seven such results in 7,000 gynæcological patients, while the writer himself had only been able to discover 355 cases in the medical literature of the last 20 years.

Treatment of Ectopic Gestation.

HAGGARD, W. D. Jr. "Vaginal incision and drainage in certain cases of ruptured ectopic gestation."—*Amer. Gyn. and Obstet. Jour.,* July, 1898.

The majority of cases of ruptured ectopic gestation are best attacked

through the abdomen but there is a class of cases which can be more advantageously treated through the vagina, viz., all cases of encysted hæmatocele. Here, the blood has, in the vast majority of cases (for the existence of extra-peritoneal hæmatocele is doubted by many) been poured out into the abdominal cavity where it has become changed, being covered in above by the intestines and omentum, as well as by a layer of semi-organised blood-clot. He agrees with Henroten that "if the tumour is low down, go at it from below; if high up, go at it from above" He diagnoses encysted intraperitoneal hæmatocele from the extra-peritoneal variety by its being smaller, situated to one side and the absence of any sign of peritoneal inflammation, but he acknowledges that *this attempted differentiation is only a pedantic refinement that is impracticable and immaterial. The treatment of both is identical.*

Uterine Hæmorrhage.

Dunning, W. L. "Menorrhagia and metrorrhagia as symptoms." —*Amer. Gyn. and Obstet. Jour.*, Sept. 1898.

Among the local causes are: 1st. Inflammatory conditions of the uterus and appendages. 2nd. Obstruction to the venous flow. 3rd. Diseases of the endometrium. 4th. Fibro-myomata. 5th. Malignant disease. 6th. Placenta prævia. 7th. Abortion. 8th. Extra-uterine pregnancy. When due to inflammation of the pelvic organs, pain is a constant symptom and is severe or not according as to whether the inflammation is acute or chronic. Where displacement of these organs causes obstruction to the venous current the patient usually has a dull ache. Primary cancer of the fundus uteri may have no symptom but hæmorrhage for a long time, so that if the patient is between the ages of 40 and 60 special care in the examination should be exercised. In three years, the writer met with four cases of ectopic gestation, and in each case the patient sought advice on account of constant hæmorrhage. In diagnosing the cause of the hæmorrhage one must be guided to a great extent by the examination of the patient herself, as the history is merely an adjunct to the physical examination.

The Use of Saline Solutions.

Hanks, Horace T. "Intra-venous injections of normal saline solutions."—*Amer. Gyn. and Obstet. Jour.*, Sept. 1898.

Death after severe accidents and operations is due either to loss of blood, traumatism, sepsis, obstruction of the bowel or suppression of urine. Shock follows severe traumatism, which cannot be avoided

where there are adhesions of the parts, nerves are injured or large masses of tissue removed. Where major operations are about to be performed, the patients receive ℥i-ii of whiskey in water every hour for six hours before operating. Two hours before operation, ℥i-ii of whiskey in ℥iv of warm normal saline solution are inserted high up in the bowel per rectum, a little tinct. opii being added when indicated. By this means shock is prevented, and the patient recovers more completely and quickly from the ether. When the patient has lost much blood, intra-venous injections of normal saline solution at a temperature of 115° F., are given. The amount used is from one to three pints but one is able to tell when enough has been used by watching the pulse and injecting until it has regained the required tension. The rectum should be employed as a receptable for the saline up to the limit of its absorptive power whenever possible, and post-operative renal congestion may be relieved by this means. This normal saline solution is composed of 90 grains of pure chloride of sodium dissolved in 33½ ounces of distilled water. Septicæmia is among the other indications for the use of the normal saline solution.

Cystocele.

Routh, Amand. "The treatment of cystocele."—*Brit. Medical Jour.*, Sept. 17th, 1898.

In this article, the writer describes a new operation for cystocele for which he claims results superior to those obtained by the usual operations for the relief of that condition. A transverse incision through the vaginal mucous membrane just below the cervix allows the bladder to be stripped off both the cervix and uterus. It is then also dissected off the anterior vaginal wall which is then divided usually from centre of the first incision to near the orifice of the urethra. The margins of this vertical incision are made to overlap and the redundant tissue removed along both the transverse and vertical incisions. The raw edges are then united. Where the uterus is retroverted, it can be brought forward and stitched to the anterior vaginal wall.

In the subsequent discussion of this paper, Saenger, of Leipzig, stated that he had been performing this operation for the last eight years. When the cervix was elongated, he performed a high amputation. Usually in cases of cystocele the perineum was lacerated, in which case he repaired it by a colpo-perineorrhaphy. The operation for this latter was a high flap-splitting one, the great objection to Emmett's perineorrhaphy being that he did not go high enough.

Fehling, of Halle, had seen bad relapses of procidentia follow high

amputation of the cervix and considered that the uterus should be maintained in position by ventral or vaginal fixation, accompanied by plastic operation on the vaginal walls.

Conservative Gynæcology.

MARTIN, CHRISTOPHER, (Birmingham). "On the conservative surgery of the ovary."—*Brit. Med. Jour.*, Sept. 17th, 1898.

If the whole of both ovaries be removed, the woman becomes sterile, menstruation ceases in about 95 per cent. of the cases, the genitals atrophy, neuroses of the menopause appear, sexual instincts cease or diminish, and there is a tendency to obesity. But if one or even a very small part of one ovary be left the above conditions are avoided, so we should endeavour to leave at least part of one ovary when possible, except where you desire to induce a premature menopause, when, of course, the whole of both ovaries should be removed. Again, in sarcoma of one ovary, the other should be removed, as there is a marked tendency for it to be affected later on. Where there is double pyosalpinx, the writer removes the uterus and tubes per vaginam, but tries to leave one or both ovaries unless they also are diseased. In all cases of fibroma of the ovary, observed by Dr. Martin, the glandular portion was spread out over the fibroid, so that by stripping off and leaving some of this capsule, one can avoid the occurrence of the premature menopanse. He recommends ignipuncture through a vaginal section for the cure of chronic and cystic ovaritis, and has cured seven out of fourteen cases treated by this method. In three out of fifteen, the ovaries subsequently had to be removed. In an early case of par ovarian cyst, the ovary can usually be left.

F. A. L. Lockhart.

Pathology.

UNDER THE CHARGE OF J. G. ADAMI.

On the Constitutional Effects of Superficial Burns.

BARDEEN C. RUSSELL, M.D. "A Review of the Pathology of Superficial Burns with a Contribution to our Knowledge of the Pathological Changes in the Organs in Cases of Rapidly Fatal Burns." *Johns Hopkins Hospital Reports:* Vol. VII., No. 3, pp. 137. 1898.

This is another of the admirable and most valuable Reports from the Pathological Laboratory of the Johns Hopkins Hospital, and will certainly rank as one of the essential monographs upon the subject of burns and their effects, not only because it gives in an excellent manner the history of the development of our knowledge of the subject together with a very full bibliography, but also because it materially advances our knowledge of the means whereby superficial burns become the cause of death.

Many have been the theories to explain rapid death after burns. In 1823, Cumin pointed out the extreme congestion of the various serous membranes, and in 1884 and 1885, Schjerning studying some 200 autopsies, found that hyperæmia of the brain occurred in 29%; hyperæmia of the lungs in 36%; nephritis, 28.2%; pneumonia, 27%; hyperæmia of the intestines, 22.2% (40% where death occurred within 48 hours); pleurisy, 18.8%; duodenal ulcer, 12.4% (after 48 hours); meningitis, 10.5%. He also showed that hyperæmia of the brain was most frequent where death occurred within 48 hours, while nephritis occurred in 20% of the cases dying within two days, in 50% of those dying within four weeks; 75% of those dying within five weeks, and 100% of those dying within 12 weeks. Pneumonia also became more frequent the longer the period of survival after the accident, while hyperæmia of the intestines like that of the brain was most marked in the rapidly fatal cases, and was rarely noticed where death occurred after two weeks.

Naturally the first explanations to be given of the fatal effects of superficial burns, were based upon disturbances of the functions of the skin. Now the skin is an organ of many functions: respiration, excretion, temperature regulation, sensation and protection. Thus there have been (*a*) those who, like Heyfelder, dwelt upon the loss of the respiratory function of the skin; (*b*) those again, like Curling, who held the theory that the retention of normal sweat products threw extra work upon the abdominal organs, and thus produced the serious consequences. This theory appeared to gain support from the fact that varnishing the skin

has results not unlike those produced by burns. (*c*) Laschkewitsch and others laid stress upon the loss of the heat regulating function of the skin. It has been shown in animals with fatal burns that the temperature after a preliminary rise sinks below the normal; Horricks has reported a similar fall in man. (*d*) Kuess again has attributed the severe symptoms to the destruction of the sensory end-organs, while many others have pointed out the prominent part played by shock, overstimulus of the vasomotor reflexes and severe nervous disturbance. Sonnenburg is one of the most recent writers upon this subject, and holds that death occuring soon after the injury is due mainly to the reflex lowering of the vascular tonus.

All these theories would, however, not seem to be adequate to explain all the morbid changes observable. Thus (*a*) the total carbon dioxide eliminated by the skin is usually less than $\frac{1}{25}$ part of that eliminated by the lungs, so that the extra amount of respiratory work thrown upon the lungs after burns, can easily be borne by them. Then again (*b*) the kidneys can easily eliminate the amount of water, ordinarily passing off as sweat. Experimental studies on the gilding of animals, as pointed out by Bardeen, do not tend to substantiate the view that the main harm done directly by superficial burns consists in the stopping of the excretory function of the skin in the burned area. Against the theory (*c*) that death is due mainly to loss of the heat regulating function, Welti has shown that the animals die in spite of being protected against heat depression, and that even when so protected, the temperature undergoes a lowering.

Not to enter now more fully into the subject of the work done by previous observers and the theories brought forward by them, we would pass on to discuss Dr. Bardeen's results.

It so happened that five children were brought to the Johns Hopkins Hospital who were so severely burned that they survived only a few hours. The autopsies were made without delay, and even where death had occurred under four hours after the injury, the evidences of alteration in the internal organs were so striking that a detailed study of the cases was undertaken. The burns varied considerably in degree, there was marked œdema in the subcutaneous tissue, especially about the face and eyelids, but in none of the five cases was there charring. The pleuræ were found normal; the lungs slightly congested and œdematous; the thymus was congested and the mediastinal lymph glands swollen and somewhat slightly congested. In the abdomen the visceral peritoneum was slightly congested, but there was no excessive fluid in the cavity, the liver was pale and cloudy, the spleen enlarged with prominent Malpighian bodies; kidneys showed cloudy cortex; the lymph follicles of the stomach and intestines were markedly swollen throughout as were also the abdominal lymphatic glands.

Thus to sum up, the chief gross pathological changes were, cloudy

swelling of the liver and kidney, softened and enlarged spleen, and above all, swollen lymphatic glands and gastro-intestinal lymph follicles; the hyperæmia of the thoracic and abdominal organs, was moderate. In the blood, examined in a fresh state, the most striking change was a considerable fragmentation of the red corpuscles, while many cells containing fragments of red corpuscles were seen in the spleen, and some in the liver; thrombi, except in the skin, were uncommon.

Upon making a microscopical study of the various organs, the most remarkable changes were seen in the lymphatic glands from the thorax and abdomen; almost without exception they showed œdematous swelling and focal changes in and about the germinal centres.

But little attention has hitherto been paid to the pathology of the conditions produced in the lymphatic glands in the body by superficial burns. Bardeen found that wherever lymphocytes were found, from the small nodules in Glisson's capsule of the liver to the largest lymphatic glands, these alterations appeared; apparently the first stage was an œdema, followed by a swelling of the lymphocytes in the germinal nests with vacuolation and nuclear changes. The germinal centre by this means expands until it reaches a size large enough to be visible to the naked eye. The protoplasm of the cells breaks up, certain endothelial cells in its neighbourhood act as phagocytes taking up the fragments of protoplasm and nuclei. In the Malpighian corpuscles of the spleen, the same changes are to be recognized.

How are these changes to be explained? Bardeen would assume that in these cases of skin burning, toxines or poisonous substances elaborated by the destruction of the superficial layers of the skin, pass into the circulation, and being carried by the blood into the lymphatics escape into the plasma towards the centre of the follicle where the arteries of the lymph glands break up into capillaries; this rapid flow of plasma gives rise to the œdematous swelling and tends to sweep the lymphocytes into the perifollicular lymph sinuses. It is interesting to note that nearly identical changes have been found in the lymphatic glands of children who have died from various infective diseases in which toxines circulate in the blood, while similar lesions can be produced experimentally in animals by the injection of ricin, abrin and similar complex organic poisons. Thus Bardeen is inclined to attribute certain very important pathological changes which follow severe burns to alterations in the blood. The destroyed red corpuscles found in the blood would not in themselves seem sufficient to explain either the clinical symptoms or the pathological lesions; nor again does thrombosis seem in these cases to have been important, but probably the alterations in the blood, as again the lesions here more especially referred to are due to the presence in the blood protoplasm of poisonous substances. Thus death in such cases would seem evidently to be the result of an acute toxæmia.

We have here gone very rapidly over the subject, and have of neces-

sity passed over many important observations. We trust, however, that we have said enough to show that this is a remarkable and important contribution to our knowledge of the nature of the lesions produced by burns and the rational explanation of the same.

J. G. Adami.

Smegma Bacillus in Sputum.

A. Pappenheim. "Befund von Smegmabacillen im menschlichen Lungenauswurf."—*Berl. Mediz. Woch.*, September 12, 1898.

As time goes on more and more evidence is being adduced to show that the routine examination of sputum by the Ziehl-Neelsen-Gabbett method is fallacious as a test for the presence of the germ of tuberculosis. For several years it has been known that the smegma bacillus is stained by this procedure, and that the acid of Gabbet's blue is not sufficient to decolourise it. Moreover, in morphology the two bacilli are so much alike that experts have been deceived. In the few observations which I have made on the subject the only difference that I could see between them is that the smegma bacillus is perhaps more slender and shows a greater tendency to possess abrupt curves.

In the beginning of 1897 Grünbaum (*Lancet*, Jan. 9, 1897,) pointed out the great frequency with which the smegma bacillus was found in normal urine, a fact which is of the utmost importance in the diagnosis of tubercular conditions of the urinary passages. According to his investigations the smegma bacillus is but rarely found in the urine of males, but is present in 59 per cent. of cases in that of females. As a rule, careful catheterisation eliminated all sources of error.

He also drew attention to the well-known fact that absolute alcohol will decolourise the smegma bacillus, while it has no effect on the tubercle.

Pappenheim seems to have been the first to record the observation that the smegma bacillus can be found in sputum. His case was a woman of 35, who presented marked emaciation, but without clear evidence of any lesion of the thoracic or other viscera. Cough set in and what were supposed to be tubercle bacilli were found in the sputum. Death occurred from œdema of the lungs. At the autopsy absolutely no tuberculosis was found, but a condition of bronchiectasis, broncho-pneumonia, and gangrene of the lung. Bacilli were found in large numbers on staining by the ordinary methods. No cultures could be obtained, and in sections stained by the method for detecting tubercle bacilli, no bacilli were seen. As the bacilli discovered were rapidly decolourised in absolute alcohol, it was decided that they were smegma.

Fraenkel (*Berl. Klin. Woch.*, Oct. 3rd, 1898,) states that he has met

with several cases of gangrene of the lungs in which the same mistake was made.

Curiously enough we have just had a case in the Royal Victoria Hospital which recalls those cited. A man was admitted on Sept. 22nd and died on Oct. 7th. He was very weak and extremely emaciated. The history was imperfect, but there had been progressive loss of weight, hemoptysis, cough and some difficulty in swallowing.

The sputum was thick, tenacious and contained streaks of blood. Examination by the Ziehl-Neelsen method showed bacilli which, while not quite typical in appearance, were so like tubercle that the case was considerod as possibly being of that nature.

The physical examination showed a condition of great dyspnœa. Over the right chest posteriorly was an area of dulness extending from the spine of the scapula to the angle. Over this area the breath sounds were loud and blowing. All over the right lung, and at the base of the left, were fine moist râles. Vascular system was normal, except for accentuation of the pulmonary second sound. As the case progressed the sputum became greenish, with white caseous-looking masses here and there. At the autopsy (performed by Dr. Adami and the writer) the lungs were bulky and did not retract. At the great fissure of the right lung there extended a wall of adhesion which shut off a large cavity in the lower part of the thorax, which contained 800 cc. of extremely foul greenish-brown pus. The right lowest lobe was compressed. On section, near the apex was a gangrenous cavity with rugged walls. There was a large cavity, 11 cm. across, in the lowest lobe which communicated with the empyema cavity. The left lung was large and emphysematous, and in the lower lobe were a few gangrenous cavities, the largest the size of a hazel-nut, communicating with a bronchus. No evidence of tuberculosis was found anywhere.

The upper portion of the œsophagus was dilated; about half an inch below the bifurcation of the trachea was an ulcerated epithelioma of the œsophagus which extended to a point one inch above the cardia of the stomach. A few glands in the immediate neighbourhood were enlarged, but there were no metastases. The stomach and intestines were normal. In this case the gangrene was most probably the result of aspiration of food particles during vomiting.

Here the diagnosis was influenced by the presence in the sputum of bacilli resembling the tubercle bacillus. While it is not clear that these were smegma baccilli, the case illustrates the point that Gabbett's blue is not to be relied on as a decolouriser.

In looking over numbers of preparations of sputum, stained by carbol-fuchsin and decolourised by Gabbet's blue, I have been struck with the frequency with which micro-organisms, particularly cocci and diplococci, still retain a vivid red colour and certainly think that it would be safer to give up Gabbet's blue in favour of some other method. It would seem that in ordinary muco-purulent expectoration, bacilli are decolourised, but when there is a gangrenous process, where the sputum is rich in fatty acids and myelin, they seem to resist the action of Gabbet's blue.

Perhaps the simplest method is to stain with carbol-fuchsin, and then counter stain and decolourise with a saturated solution of methylene blue in absolute alcohol for five minutes.

This is Weichselbaum's method, and in my hands has proved satisfactory.

Honsell (*Arb. aus d. path. Inst. zu Tübingen*, Bd. II., s. 317,) recommends decolourisation with a 3 per cent. solution of hydrochloric acid in absolute alcohol, for not less than ten minutes, counter staining with a solution of methylene blue in 50 per cent. alcohol..

Pappenheim, after numerous trials, recommends staining, first with carbol-fuchsin, then counter staining and decolourisation in the following:

Absolute alcohol, 100 parts.
Corallin (Rosolic acid) 1 part.
Methylene blue to saturation.
Glycerine, 20 parts.

Coverslips are subject to this stain for three minutes. The tubercle bacilli are always red, while the smegma and other germs are blue.

The only bacilli found in sputum which simulate the tubercle are the bacillus of leprosy and the smegma. The former, of course, differs morphologically, and is often found within cells, while the history and the course of the disease would differentiate. It stains much more readily than the tubercle. Bacteriologically, the smegma bacillus differs in addition to the points above mentioned, in that it usually grows readily on the ordinary culture media, though not invariably so, stains well by the common aniline colours, and is non-pathogenic. In urine it is usually more angular at the ends, occurs in masses, and is often attached to epithelial cells. No stress should be laid on the point that bacilli are found within cells, for the tubercle like the others can be found thus situated.

A. G. Nicholls.

Reviews and Notices of Books.

A Manual of Modern Surgery, General and Operative. By John Chalmers Da Costa, M.D., Clinical Professor of Surgery, Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia Hospital, etc. With 386 Illustrations. Philadelphia: W. B. Saunders. 1898.

This is a second edition. The first appeared in 1894. The second edition is larger than the first and contains over a hundred pages more matter. It has been largely rewritten and much new matter has been added. Sections have been added upon the surgery of the liver and gall-bladder, the spleen, the pancreas, the female breast, wounds inflicted by modern projectiles, electrical injuries, and the use of the Röntgen Rays. The following operations have been described: Resection of the Casserian Ganglion; Methods of Gastrostomy; Schede's Operation of Thoracoplasty; Use of the Murphy Button; Various new methods of Enterorrhaphy; Bodine's method of Colostomy; Prevention of Hemorrhage in Hip-Joint Amputation by Macewen's method of Aortic Compression; Edmund Owen's Operation for Harelip; Senn's method of Resection of the Shoulder-joint, etc.

The book will be found useful to students and general practitioners. It is difficult if not impossible to deal satisfactorily with such a great subject as general surgery in so small a volume. All padding must be left out, and in some cases the details of complicated operative procedures are so much abbreviated that a degree of obscurity is unavoidable.

In some instances the subject matter is open to criticism. For instance, in dealing with the treatment of tetanus the author very correctly intimates that the best treatment is prevention, and with this end in view directs that "every punctured wound is to be incised to its depth and thoroughly cleaned and drained. No mention is made of the value of the tetanus anti-toxine as a preventive, and very little is said about its use during the course of the disease.

In the chapter on fractures, one is reminded of old days by some of the apparatus shown, for example, the leg fracture-box. The ambulatory method of treating fracture of the leg is mentioned, but not sufficient detail given, to enable one not familiar with the method to employ it.

Exception may well be taken to the dogmatic and unqualified directions for the treatment of compound fractures. If a student start out, determined to unite the fragments of bone by wire, cat-gut or kangaroo-tendon, and to pass a drainage tube through every leg in which there is

a compound fracture, his conduct will probably be severely criticised by those who know better.

The publisher's part of the work is excellent. The book is of convenient size, and the print is good. G. E. A.

Yellow Fever, Clinical Notes. By Just. Touatre, M.D., Former Physician-in-Chief of the French Society Hospital, New Orleans. Translated from the French by Chas. Chassaignac, M.D., New Orleans. Small 8vo. pp. 206. New Orleans, 1898.

This work, written in a clear style with occasional indications of its French origin, deals more especially upon the importance of Faget's Law, as it may be termed. Chas. Faget, a New Orleans physician, after the epidemics of '53, '58, '67, '70 and '73 in New Orleans, called attention to the fall in the pulse rate during the first days of the disease as one of the indispensable diagnostic signs thereof. There is no other infectious disease in which there is this strongly marked divergence between the falling pulse rate and the rising temperature, and Touatre gives very numerous charts bearing out the law and showing that in the first stage of the disease the divergence is just as characteristic as are icterus and black vomit in the somewhat later stages. Apparently Dr. Touatre worked with Faget, and materially aided in establishing the value of this law.

The work is of interest now that increased attention has been called to the disease by the late war and the observations of Sanarelli.

A Treatise on the Science and Practice of Midwifery. By W. S. Playfair, M.D., L.L.D., F.R.C.P., Physician-Accoucheur to H. I. and R. H. The Duchess of Saxe-Coburg and Gotha (Duchess of Edinburgh); Emeritus Professor of Obstetric Medicine in King's College; Consulting Physician for the Diseases of Women and Children to King's College Hospital, The General Lying-In Hospital, The Evelina Hospital for Children, etc.; Late President of the Obstetrical Society of London; Examiner in Midwifery to the Universities of Cambridge and London, and to the Royal College of Physicians. Seventh American from the Ninth English Edition. With 7 plates and 207 illustrations. Lea Brothers & Co., Philadelphia and New York. 1898.

Little need be said in praise of a work which has run through eight editions since its first appearance in 1876. It would, however, be of interest to compare the present edition, published in 1898, with the one of twenty-two years ago, and note the changes which have taken place. The introduction of antisepsis in midwifery practice is perhaps the most important and far reaching in its effects, and next to this the more general use of forceps in prolonged labour. On this latter subject, the author, while not altering his opinion as set forth in the last (eighth)

edition, has inserted a foot-note criticising Professor W. Japp Sinclair's contention in his address delivered at the Montreal Meeting of the British Medical Association last summer. Sinclair claimed that the vast increase in surgical gynæcology of late years was due to surgical interference in midwifery practice, and blamed the text-books for advocating the too frequent use of forceps. That such is not the case, Playfair endeavours to show, drawing on his own large experience to prove that while there may be some abuse, this is offset by a far greater gain in various ways, among others, by the almost entire disappearance of recto-vaginal fistula, an accident relatively common when the head was allowed to lie in the same position in the pelvis for hours at a time.

In the present edition there has been a thorough revision of the text, many parts being entirely re-written. It contains two new plates and seventeen new wood-cuts, while several illustrations which had become obsolete have been omitted.

Atlas of Syphilis and the Venereal Diseases, including a Brief Treatise on the Pathology and Treatment. By Professor Dr. Franz Mracek of Vienna. Authorized Translation from the German, Edited by L. Bolton Bangs, M.D., Consulting Surgeon to St. Luke's Hospital and the City Hospital, New York; late Professor of Genito-Urinary Surgery and Venereal Diseases, New York Post-Graduate Medical School and Hospital. With 71 coloured plates. Philadelphia: W. B. Saunders. 1898. Canadian Agents, J. A. Carveth & Co., Toronto. Price $3.50.

This book is intended to supply the general practitioner with an atlas of syphilis and venereal diseases, which will be useful in his daily practice. With this object in view, the author has selected for his illustrations the more common forms of the syphilitic eruptions although, as can readily be understood, all but the extremely rare are included in the series of sixty plates of this disease.

The plates are reproductions of water colour drawings made in the author's clinic at Vienna, and are identical with those supplied for the German Edition. They are remarkably well executed and true to life, both in colouring and appearance, and lose nothing by being of much smaller size (crown 8vo) than in the majority of atlases of syphilology. In several instances, where the characteristic features of the eruption are better brought out by a closer view, a portion only of the body has been selected and represented in life size, while the general distribution of the lesion has been shown by a supplementary wood-cut. The first twelve plates give representations of the various forms and sites of the initial lesion. Then follow thirty plates of the secondaries and fifteen of the tertiaries. Among the latter one misses the tubercular ulcerating form which is so commonly met with in this country. There are also three plates of hereditary syphilis. Chancroids, buboes and veneral warts,

with one plate of molluscum contagiosum surrounding the vulva make up the remaining ten plates.

On the opposite page to each of the plates is given a brief summary of the history of the case, together with a description of the skin lesion and the treatment used with the result. The volume also contains a short account of syphilis, venereal ulcers and gonorrhœa, more especially with regard to treatment. The prescriptions are written out in full, the English equivalents to the metric weights and measures being given in brackets.

The book is a remarkable one, when one considers its small cost as compared with most works of this class, and deserves a wide circulation.

G. G. C.

A Pocket Medical Dictionary.—Giving the Pronunciation and Definition of the principal words used in Medicine and the Collateral Sciences, including very complete tables of the Arteries, Muscles, Nerves, Bacteria, Bacilli, Micrococci, Spirilli and Thermometric Scales, and a Dose-List of Drugs and their Preparations, in both the English and Metric Systems of weights and measures. By GEORGE M. GOULD, A.M., M.D., Author of "The Illustrated Medical Dictionary," "The Student's Medical Dictionary," Editor of "The Philadelphia Medical Journal," President, 1893-94, American Academy of Medicine. A new Edition, entirely re-written and enlarged, including over 21,000 words. Philadelphia: P. Blakiston's Son & Co. 1898. Price $1.00.

This is a remarkably complete little pocket dictionary, printed on good paper with gilt edging, and bound in leather with rounded corners, so as to stand a large amount of wear. The tables are very full and will be found of great service to the student in memorizing. The number of words is nearly double that of the first edition.

American Pocket Medical Dictionary. Edited by W. A. NEWMAN DORLAND, A.M., M.D., Assistant Obstetrician to the Hospital of the University of Pennsylvania; Fellow of the American Academy of Medicine, etc. Containing the pronunciation and definition of over 26,000 of the terms used in Medicine and the kindred sciences, along with over 60 extensive tables. Philadelphia: W. B. Saunders. 1898. Price $1.25.

In this little book the author has supplied us with a small dictionary, which though handy in size, is yet complete enough to meet the requirements of both the practising physician and the student of medicine. It contains, moreover, a large number of most valuable tables, including a table of doses in both the English and metric systems, which will be found most useful. The book is bound in leather, with gilt edging to the pages, and is neat, strong, and durable.

Introduction to Pathology and Morbid Anatomy. By T. Henry Green, M.D., F.R.C.P. Revised and enlarged by H. Montague Murray, M.D. 8th American Edition, thoroughly revised from the 8th English Edition by Walton Martin, M.D. 8vo. pp. 582. 216 illustrations and a colored plate. Philadelphia and New York: Lea Bros. & Co. 1898.

It is interesting to compare this eighth edition with the first and second editions of Green's little work, which from its price and clearness, has always been popular with the students wishing to "grind up" the elements of general pathology and morbid anatomy. But even now when it has risen to its present size, we cannot feel that it is wholly adequate. The general pathology it is true, has much improved; we doubt, however, whether it is wise to introduce 100 or more pages of bacteriology, or whether any one can properly deal with the elements of special pathology in 170 pages. It would be well in a future edition we should think, to delegate bacteriological subjects entirely to text-books on that subject, and to expand the section upon special pathology.

The illustrations are very clear and the text is clear and good.

The Medical News Visiting List for 1899. Weekly (dated, for 30 patients); Monthly (undated, for 120 patients per month); Perpetual (undated, for 30 patients weekly per year); and Perpetual (undated, for 60 patients weekly per year). The first three styles contain 32 pages of data and 160 pages of blanks. The 60-patient Perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, with pocket, pencil and rubber. Seal Grain Leather, $1.25. Thumb-letter Index, 25 cents extra. Philadelphia and New York: Lea Brothers & Co.

A Visiting List is an indispensable convenience for the active practitioner. Its carefully adapted blanks enable him at once to note clinical details of every day work, as well as charges and receipts, and to unburden his memory from what can better be carried on paper. It also furnishes him with a legal record necessary for the collection of delinquent bills. Prominent among the many books of this nature stands the *Medical News Visiting List*. Its blank pages are arranged to classify and record memoranda and engagements of every description occurring in the practice of the physician, surgeon or obstetrician. The work opens with 32 pages of printed data of the most useful sort, including an alphabetical Table of Diseases with Approved Remedies, a Table of Doses, sections on Examination of Urine, Artificial Respiration, Incompatibles, Poisons and Antidotes, a Diagnostic Table of Eruptive Fevers, and a full-page plate showing at a glance the incisions for ligation of the various arteries, an invaluable guide in such emergencies.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, October 24th, 1898.

J. G. Adami, M.D., President, in the Chair.

Drs. W. G. M. Byers, C. H. Church, H. M. Church, W. M. Fisk and C. J. Edgar were elected ordinary members.

Pathological Specimens.

Dr. A G. Nicholls showed the pathological specimens, and gave the history of a case of appendicitis, with unusual changes in the liver, a case of gastro-cholecystic fistula with diverticula in the duodenum, and a case of cancer of the œsophagus. (See page 826.)

Cancer of the Tongue.

Dr. G. E, Armstrong showed a man from whom he had removed one-half of the tongue by a modification of Buntin's method. (To be published in the December number.)

Charcot's Joints.

Dr. G. E. Armstrong showed a tabetic patient with marked disorganization of the right knee and left hip joints. (To be published in the December number.)

The Crescent form of Malaria Plasmodium.

Dr. H. A. Lafleur exhibited specimens of blood from a case of æstivo-autumnal malaria which had been under his care in the Montreal General Hospital showing the crescent form of plasmodium.

The patient, a French-Canadian, had served in the United States Army and contracted the malaria at Santiago. At the close of the war he had come to Canada and so drifted into the hospital. One feature of interest in the case was the resistance shown by the organism to quinine. After three days of observation, quinine was commenced on the fourth day, and although under its influence the paroxysms of fever were controlled, the plasmodium was still present in the blood, though not in such numbers, when he left the hospital on the tenth day. In the quotidian or tertian fevers usually met with in Canada, from ten to fifteen grains of quinine given in divided doses was sufficient to entirely remove the plasmodium from the blood. This was the first time that the crescents had been shown before the

Society, but the speaker had seen them in one case in hospital the preceding summer.

Hospital Abuse.

The discussion on this subject which was to have followed the reading of Dr. Armstrong's paper at the meeting of June was continued.

Dr. H. L. Reddy said that there was very little room for hospital abuse in the Women's Hospital with which he was connected, as the conditions were such that it was to the interest of the patients themselves to obey rules. Thus the patients were all required to pay a small amount towards their board weekly if they desire to send their children to the Foundling Institutions. If they do not pay their board they are required to nurse their children. They are warned of the danger of mammary abscess if they wean the children on leaving the hospital without having the treatment which is required on such occasions. For those who are really unable to pay the small sum demanded, it was often possible to find some one responsible on whom the charge could be laid.

The matron who admits the patients under his directions generally found out the truth, and naturally a great deal depends on her to prevent abuse of the charity of the hospital. If there was no one whose duty it was to provide, and in all cases of the deserving poor married women, they are admitted to the hospital free of charge.

Dr. T. G. Roddick thought that Dr. Armstrong referred more especially to abuse in the out-patient departments of the general hospitals and agreed that there was great abuse made of these charities. He felt, however, that the profession were more to blame than the public. The Montreal General Hospital had gone into this subject years ago and found that many, then, were in the habit of driving to and from the hospital in cabs. He advocated more rigid attention to receiving patients only on properly made out certificates given by responsible persons. He objected to the small charge made at most hospitals to poor patients, as these on receiving treatment were under the impression, in many instances, that they were paying for what they obtained.

Dr. H. A. Lafleur was of the opinion that the much vaunted certificates were worse than useless. Any clergyman or priest would give a certificate for the asking, and the only class that the certificates kept from coming to the hospital were those who would not take the trouble of procuring them.

Dr. Robert Craik thought that the system in vogue at the Roosevelt Hospital in New York was about the best remedy. This was that every applicant for treatment was obliged to go before an officer and register the name and other particulars, and if obviously a suit-

able case, he or she was passed on to the doctor ; if not, the case was investigated before it was accepted for treatment.

Dr. A. J. RICHER was afraid that the method of dealing with applicants referred to by Dr. Craik might put such difficulties in the way of admitting patients, that it would make the system worse than the present one. In his experience in the hospitals of Paris, where a somewhat similar system was carried out, cases were not rare where patients had applied to the bureau and been refused, and had been picked up later on the streets dead. It might also cause abuse in the opposite direction. The officers whose duty it was to attend to the admission of patients were apt to take advantage of their position and become abusive to the poorer classes. At the same time he thought that it might be possible, through a central board as suggested by Dr. Armstrong, to obviate this difficulty and thus try to relieve the hospitals of much of the present abuse.

Dr. J. M. ELDER held that certificates were absolutely worthless, and that the present means of preventing abuse were quite inadequate.

There was a certain definite floating population of hospital abusers, who present themselves for treatment with more or less regularity at the various hospitals. This class was able to pay for medical services and should be made to do so ; but the real difficulty in dealing properly with them lay in the rivalry between the hospitals themselves for patients. The remedy was concerted action on the part of the different hospital authorities, so that each hospital should furnish to the others a sort of "black list" of these professional "hospital abusers," and thus render it impossible for them to get *gratis*, medicine and advice they were well able to pay for.

Some such plan as Dr. Armstrong suggests must soon be adopted in justice to the hospitals, as well as to the outside practitioners.

Dr. A. E. GARROW agreed with Dr. Roddick that the physicians themselves were the worst offenders, as patients sent to any hospital with a doctor's certificate stating that they were suitable cases were admitted without question. The method in vogue for the past year at the Royal Victoria Hospital was somewhat like that advocated by Dr. Craik and it had been found to work very well.

The PRESIDENT pointed out that clearly the main cause of the abuse of hospitals by the public, the hospital management and the profession, lay in the fact that no clear distinction was made between the hospital as a pure charity and the hospital as what is truly, a benefit society—and that it was the attempt with true British illogicality and desire to compromise, to run our hospitals as both at the same time,

which was at the basis of the main abuses of which complaint is now being made.

If the hospital has been founded originally for the benefit of the poor, and if that hospital calls itself a charitable institution, it is, if not absolutely wrong, certainly most impolitic for such hospital to accept into its wards pay patients. Only those who are incapable of paying the usual fees of the practitioner should be admitted. There may be certain minor exceptions to this broad principle, but the principle exists, for what happens if this rule be neglected ? Y. sees that X. who can perfectly well afford medical treatment, is admitted to the hospital, and not knowing the exact conditions of X.'s admission, is unable to see why he also should not use the hospital ; what is more, as Dr. Armstrong has pointed out. when the subscribing public recognise this fact and recognise also that the attention which they receive at the hospital is better than they can possibly receive at home, then these subscribers begin to be anxious themselves to use the hospital and once private wards are introduced, steadily, both the outside public and the staff of the hospital are led to urge that there be an increased number of such private wards, and so gradually and surely once the principle is admitted that those who can afford to pay the ordinary fee demanded by the ordinary practitioner, can get treatment at the public hospital, the attempt of the paying public to utilise the hospital becomes evident and becomes successful. It was a mistake for charitable institutions, such as our larger hospitals in Montreal, to allow any corporations or combination of individuals to subscribe to the hospital funds conditionally.

The working classes now-a-days have become so accustomed to the system of medical relief afforded by the benefit societies to which they belong, that almost naturally they appear to be incapable of seeing that their subscriptions to the hospital are not of the same class as their subscriptions to their benefit society. Thus it is that foremen and others receiving high wages, consider themselves absolutely entitled to treatment at the hospital to which they have subscribed.

It is for our hospitals to make it clearly understood that they only exist for those who cannot pay the ordinary fee of the ordinary practitioner. The more the President considered this subject the more he was convinced that it was a mistaken policy to have private and public wards in the same building. Undoubtedly, the better class public has of late grown to realise the admirable service afforded in our hospitals and is beginning to demand that it should be entitled to the same advantages as the poor can now obtain. But the well-to-do

have no right to ask the charities to give them these advantages. The way to satisfy this demand is for the public or sections of the public, acting more or less in concert with the medical profession, to combine and establish pay hospitals. It would even be legitimate for the existing hospitals to establish separate buildings in which they receive well-to-do patients and to employ the profits obtained from such patients for the purposes of the charity pure and simple, but so long as pay patients and charity patients are received into the same building, and given what is practically the same treatment, for so long is it certain that those who can perfectly well afford to pay the hospital charges and the physicians fees' will attempt to benefit from the charity.

In the meantime, he was of the opinion that to lessen the evil, no better scheme could be brought forward than that suggested by Dr. Armstrong, and he hoped that this Society would use its influence to bring about the development of such a system of charity organization and enquiry into the good faith of those presenting themselves for gratuitous treatment in our public hospitals.

EIGHTH ANNUAL MEETING OF THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION, BUFFALO, N.Y.

The eighth annual meeting of The American Electro-Therapeutic Association was held in Buffalo, N.Y., on September, 13th, 14th and 15th, 1898, under the presidency of Dr. Charles Rea Dickson, of Toronto, Ont.

First Day.

Dr. Conrad Diehl, Mayor of Buffalo, welcomed the Association to the city, and Dr. Francis B. Bishop, of Washington, D.C., responded to the address of welcome. The president announced the delegates appointed from medical societies.

Reports of the standing Committees on Scientific Questions were received: Meters, by Dr. Margaret A. Cleaves, of New York; Constant Current Generators and Controllers, by Dr. Robert Newman, of New York; Electric Light Apparatus for Diagnosis and Therapy, and the Roentgen X-Ray, by Mr. J. J. Carty, E.E., of New York The following were read: Phlebitis, a Clinical Study, by Dr. Margaret A. Cleaves, New York; The Diagnostic and Therapeutic Relations of Electricity, to Diseases of the Central Nervous System, by Dr. A. D. Rockwell, New York.

At the afternoon session the first paper by an honorary fellow of the Association, Dr. Georges Apostoli, of Paris, France, New Uses of the Undulatory Current in Gynæcology, was read by Dr. G. Betton Massey, of Philadelphia.

Electricity in the Treatment of Uterine Fibromata, by Dr. Felice La Torre, of Rome, Italy, honorary fellow, was read by Dr. John Gerin, of Auburn, Secretary of the Association. Electro-Therapeutics in Gynæcology, by Drs. Georges Gautier and J. Larat, honorary fellows, of Paris, France, read by Dr. Dickson, President of the Association.

A paper by Dr. William J. Herdman, of Ann Arbor, Mich., on The Use of Electricity in Gynæcology, read by title, was followed by a paper on The Treatment of Uterine Fibroids by Small Currents, Administered Percutaneously, by Dr. Richard J. Nunn, of Savannah, Ga.

Dr. W. H. White, of Boston, read a paper by Dr. Adelstan de Martigny, of Montreal, on Treatment of Menorrhagia by Weak Current and Silver Internal Electrode.

Second Day.

The first paper was presented by Dr. Lucien Howe, of Buffalo. Dr. Howe's subject was The Method for Using Cataphoresis in Certain Forms of Conjunctival Inflammation.

He illustrated his remarks by means of a number of his patients The paper was received with great interest, and a lengthy discussion followed.

Dr. Robert Newman, of New York, presented an able paper on Electricity in Deafness and Stricture of the Eustachian Tube. In his address, Dr. Newman rehearsed the history of a peculiar case which came under his professional care. He also cited a number of other cases, which had been reported by other physicians.

The following papers were read : Dr. Grover W. Wende, of Buffalo, Electricity in Acne Vulgaris and Acne Rosacea ; Dr. William C. Krauss, of Buffalo, A Case of Lightning Stroke Without Serious Consequences, read by title.

Dr. G. Sterling Ryerson, of Toronto, Cases of Lightning Stroke Causing Diseases of the Eye ; Dr. Francis B. Bishop, of Washington, High Tension Current in Neuritis ; Dr. Charles Rea Dickson, Electricity in the Treatment of Goitre.

In the afternoon upon re-assembling President Dickson delivered his annual address.

Then followed a series of Ten-minute Talks on Electro-Therapy, which had been prepared for the special benefit of the busy practitioner, technicalities and details being avoided as far as possible. It was intended that the Talks should be suggestive rather than exhaustive.

The Effect of Electricity Upon Tissue Metabolism, by Dr. William J. Herdman, of Ann Arbor, Mich., was read by title. Dr. G. Betton Massey, of Philadelphia, presented The Galvanic Current in Gynæcology. Dr. C. R. Dickson, Surgical Uses of Electricity. G. Herbert Burnham, of Toronto, Combined Use of Medicinal and Electrical Treatment in Some Affections of the Eye, read by title. Dr. Robert Newman, of New York, Electricity in Genito-Urinary Diseases. Dr. G. Betton Massey, Treatment of Malignant Growths by Means of Electricity. Dr. Louis A. Weigel, of Rochester, Orthopædic Uses of Electricity. The Functional Neuroses with Special Reference to Neurasthenia, Their Pathology and Treatment, by Dr. Rockwell. Electricity in Diseases of the Nervous System, Dr. Herdman, was read by title.

A short business session was held from 8 to 9 p.m., at which the following officers were elected:

President.—Dr. Francis B. Bishop, of Washington.

First Vice-President.—Dr. Ernest Wende, of Buffalo.

Second Vice-President.—Dr. W. H. White, of Boston.

Secretary.—Dr. John Gerin, of Auburn.

Treasurer.—Dr. Richard J. Nunn, of Savannah, Ga.

Executive Council.—Dr. Robert Newman, of New York, and Dr. G. Betton Massey, of Philadelphia, three years; Dr. A. D. Rockwell and Dr. William J. Morton, of New York, two years; Dr. Charles R. Dickson, of Toronto, and Dr. Frederick Schavoir, of Stamford, Conn., one year. Washington was selected for the convention next year, to be held September 19-21, 1899.

Third Day.

A resolution was passed urging upon colleges and medical schools the necessity of establishing chairs for the teaching of electro-therapeutics: or if that is not at once practicable, that more time be devoted to the teaching of this very important branch; and that the matter be more fully urged upon the attention of The Association of Medical Colleges. Many new members were elected, and the customary votes of thanks passed.

The congratulations of the American Electro-Therapeutic Association were extended to the University of Buffalo for its progression in establishing a chair of electro-therapeutics in the medical college.

A general vote of thanks was also adopted, expressing the association's deep appreciation of the courtesy and hospitality extended to the members during the convention in Buffalo.

The following papers were presented: Drs. Georges Gautier and J. Larat, of Paris, France, The Hydro-Electric Bath with Sinusoidal Current in Disease; and The Use of the Hot Air and Light Bath in Disease. Dr. Francis B. Bishop, of Washington, Alternating Dynamo Currents. Dr. Margaret A. Cleaves, of New York, The Electric Arc Bath. Dr. J. H. Kellogg, of Battle Creek, Mich., The Electric Light Bath. John J. Carty, of New York, a well-known electrical engineer, on Some Suggestions on the Possibilities of Cataphoresis. Nikola Tesla, (read by Dr. White, of Boston) A High Frequency Oscillator for Electro-Therapeutic Purposes.

The effect of High Tension Discharges upon Micro-organisms. Drs. J. Inglis Parsons and C. Slater, London, England.

The Action of X-Rays upon Tuberculosis. Drs. J. Bergonie, of Bordreaux, France, and Teissier, of Paris.

Two Years of Practice in Radiotherapy, Drs. Georges Gautier and J. Larat, Paris, France.

The social side of the meeting was by no means neglected, Dr. Ernest Wende, Health Commissioner of Buffalo, had charge of the local arrangements for the comfort, convenience and entertainment of the visitors, and too much praise cannot be accorded for the manner in which his plans were carried out.

A most interesting exhibition of electrical apparatus for diagnostic, therapeutic and radiographic purposes was held in the room adjoining the meeting hall, and was a very popular feature of the meeting.

The eighth annual meeting was universally conceded the most successful and enjoyable that has been held, and the prospects for the association were never brighter or more encouraging, Arrangements are already in progress for the Washington meeting.

Correspondence.

THE COLD BATH TREATMENT OF TYPHOID FEVER CARRIED OUT UNDER DIFFICULTIES.

The following letter tells in a graphic way some of the difficulties and trials of the country practitioner in dealing with typhoid fever. It, however, shows that where there is a will there is a way to carry out the cold bath treatment. Dr. Gordon and the nurses who so ably and generously assisted him in his work, have the satisfaction of having performed a very difficult and trying task, which resulted in the undoubted saving of several lives. All honour to the doctor and nurses. (J.S.)

To the Editors of The Montreal Medical Journal.

Sirs,—I enclose you a chart which may prove interesting. It illustrates Brand's system of bathing, and excellent nursing, modified by ignorant relations in smuggling food to the patients.

The scene of action was in the rebellious township of Lowe, on the Gatineau, County of Wright, 40 miles from Ottawa. There was a series of thirteen cases, beginning about the end of July and lasting into October, eleven residents, and two others who were building a barn and living there. Of these we had eight, the rest were sent to Ottawa to different hospitals, and of these five two died. We lost one out of our eight. They were using the water of a small puddle, called a spring, in heavy clay, milk cans in one corner, cows tramping through it, and the natural receptacle for surface washings from the barn and stable. The people were very ignorant and dirty ; with three varieties of pediculi and other vermin quite plentiful. We had to make a bunk for each one in the cabin and furnish nearly everything to cover them, being greatly assisted by the Victorian Order. Nurses Jemmett and Hazen of the Victorian Order of Nurses, nursed them for eleven days, then Nurse Hazen left, and Nurse Jemmett stuck to them alone without any help worth mentioning for four days, till Nurse Hercomb, of Montreal, who was taking a holiday up here, volunteered to go to her assistance, then they finished it out together, staying about six weeks. Our bath was made out of rough boards, like the outside shell of a coffin, but it served.

The funny part of the business is that we had relapses which we

could not understand till one of the nurses discovered a convalescent carrying a quarter of a sodden pie upstairs under her apron and giving it to the case whose chart I send you. Then the whole thing came out, there was a family compact to prevent us from starving the "poor things," though we had spent hours trying to impress the danger of such a course on them, we did not have the sole monopoly of the feeding of the case. The nurses slept in the barn and the neighbors, with two exceptions, avoided the district most carefully. I "loaned" my socks to the corpse and borrowed a pair of stockings from one of the nurses to come home with. Our fatal case, in the 4th week, suddenly collapsed, temperature went down to 96°, respiration 6, pulse imperceptible at wrist, very unsatisfactory with stethoscope, eyes half shut, flies resting on them did not disturb him, glazed; lived a week after this and reacted under hypodermics of strychnine, brandy, &c., and hypodermoclysis of normal salines, nutrient and saline enemata, and a circle of heated stones placed around him; catheter regularly, became conscious, temperature rose up to $100\frac{3}{5}$, pulse weak but perceptible at wrist, could take nourishment, thought we were going to get him through but he went off suddenly on the 8th day; no symptoms of perforation, no hæmorrhage.

I took the post-graduate course in McGill last May, two or three more such courses would do me no harm.

Very sincerely yours,

CHAS. M. GORDON.

Aylwin, P.Q., November 2nd, 1898.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXVII. NOVEMBER, 1898. No. 11.

HOSPITAL ABUSE.

It would appear that action, looking to a lessening of hospital abuse in Montreal, is likely to follow as a result of the discussion of Dr. Armstrong's paper by the members of the Montreal Medico-Chirurgical Society. This Society has adopted the principle of action, outlined by Sir William Broadbent, as that of the London Charity Organization Society.

In response to a letter sent to the presidents of the different Montreal hospitals, replies have already been received from Mr. H. Wolferstan Thomas, President of the Montreal General Hospital, and from Mr. R. B. Angus, President of the Royal Victoria Hospital, signifying their willingness to assist in lessening the growing evil, and we learn that the Western Hospital is also willing and anxious to join in the movement. We hope that the other hospitals will also take a part.

The idea is to form a Central Board with each of the hospitals represented on the Board by one or two members of this Committee of Management. It is probably desirable also to have on the Board a few hospital physicians as well as one or two physicians not connected with any hospital. A Board so formed would be thoroughly representative, and their action would be uniform and comprehensive. Such a Board would tend to check the present practice occasionally adopted by very well-to-do people of going from one hospital to another until one was found that did not put inconvenient questions, and did not take too much trouble to verify the answers given.

It will be the aim of the Board to facilitate the entrance and immediate care of all needy applicants, to give without question suitable relief to all emergency cases, and to prevent so far as possible the gratuitous treatment, both in the out-door departments and in the

public wards, of people who are perfectly well able to pay for the same.

We hear this complaint of hospital abuse from all parts of our Dominion where public hospitals obtain, and it may not be out of place to suggest that this Central Board place themselves in communication with other hospitals throughout the country. In this way, it could be made possible for hospitals to provide better accommodation for a larger number of needy while preventing the abuse of the funds provided by a generous and charitable public for the care of the sick poor.

THE PLAGUE IN VIENNA.

It is but a few months ago since we saw a letter from a leading sanitarian in India who had himself worked for months attempting to stem the plague in Bombay, in which he expressed himself, to say the least, as doubtful concerning the future of the plague, and more especially the future of Europe. In India, he and those with him, had powers so great that they could remove whole villages and towns into temporary isolation, and could burn down the cheaply constructed wooden houses, and despite all this, yet were unable to overcome the epidemic. What it would be if the disease reached the solidly built houses of Europe, he scarce dare mention. At the time, we thought that these forebodings were excessive, but, slowly the disease is creeping northward along the old cholera route through Russia, and even though now we are not prepared to believe that Europe is in danger, we can readily understand that the recent episode in Vienna has caused great excitement.

In the *Vienna Clin. Woch* of Oct. 27, there is what seems to be a final account of the occurrence, and it disposes of the rather sensational statement copied into some of the leading journals here, to the effect that the now notorious Barisch, contracted the disease by being bitten on the hand by an inoculated rat, and subsequently suffered from symptoms of pneumonia, which eventually showed itself to be that form of plague pneumonia which had been one of the features of the Bombay epidemic. Such pneumonia, in the absence of axillary buboes, is not easily explicable on the theory of a bitten hand. The man had evidently been over-drinking and was in a susceptible condition in consequence.

Despite all care, Dr. Müller, who assisted in the disinfection of the death chamber, fell ill two days after the death of Barisch and died within 24 hours, while the nurse Pacha was taken ill about the same time as Dr. Müller, and died after 10 days illness. No wonder that

this mortality alarmed the Viennese, and that the strictest precautions have been taken.

It is difficult to say how these cases of infection occur in bacteriological laboratories. Perhaps this is a wrong way of putting it, for to the outsider, when it is taken into consideration that each culture made may contain millions of bacteria, it is difficult to understand how it is that any medical bacteriologist remains alive and well, yet as a matter of fact, under the ordinary regulations of the bacteriological laboratory, there is certainly a minimum of danger; bacteria are sedulously kept corked up, and it becomes second nature to destroy or disinfect everything which might hold or convey living pathogenic germs. All over the world the plague bacillus has been and is being studied, not only in the well established laboratories of the big cities, but in temporary laboratory buildings put together anyhow in Hong Kong, Bombay and elsewhere, and this is the first occasion in which any of the workers has succumbed. Possibly the low state of health of the man Barisch may explain the origin of the trouble, but even granting that, there must have been some carelessness in the laboratory, and if the disease was as stated the respiratory form, then some of the bacilli must have been allowed to get free around the laboratory and so into the dust.

Looking backwards, one recalls other cases in which bacteriological investigations have been fraught with danger, but in nearly every case, the victim has been to blame himself for carelessness. The writer of this, has known those who have suffered from Glanders, Anthrax, Tuberculosis, Typhoid, and of cases of Cholera and Diphtheria occurring in laboratory workers directly as the result of their work. Happily such cases are relatively rare, and indeed the dangers of a bacteriological laboratory are less than those of the post mortem room.

THE GARBAGE PROBLEM.

The Municipal Government of Montreal, appears to be perennially passing through a series of crises. Each department seems lacking chiefly in ability to do the one object for which it is presumed to exist. The Health Committee never has money to spend on ordinary sanitary objects, as three-fourths of its revenue is absorbed by the cleaning out of back lanes and destroying garbage which accumulates there. The other sanitary needs of the city appear to be left pretty much to take care of themselves. It may be recalled that some years ago a certain individual who was a city contractor, had the duty of disposing of the garbage. He fulfilled that part of his contract called

for in the removal of the garbage, but the other part of the contract, calling for the destruction of the garbage and preventing it from becoming a public nuisance and a menace to health, he did not fulfil. On this account or possibly from other reasons, the contract was not renewed by the council and the Health Committee assumed the responsibility of disposing of the garbage themselves. This work was placed under the immediate supervision of the Sanitary Engineer, whose work in the department as far as we can learn has been thorough and satisfactory and with whom we have no fault to find.

The work necessitated the purchase of a number of horses and carts by the city, the building of an incinerator and the employment of a large staff of men. The incinerator was somewhat of an experiment in the way of construction, and allowing for this has been fairly successful. The garbage has been under this new regime, fully as much of a problem as under the old. There have been constant complaints, that the appliances, staff and funds were insufficient to cope with the task. One trouble was that the garbage was mixed with large quantities of ashes. Hence the officials wished to insist that the ashes should be collected separately; this proposition it was said, would save annually to the Health Committee, the sum of $25,000, but that is not necessarily a reason why the Health Committee refused to have anything to do with it. Diluting garbage with ashes would not be an evil during the summer, as it would tend to mitigate the effluvia of decomposition, but unfortunately in the summer season when garbage is plentiful, ashes are scanty, and in the winter when there is no tendency to decomposition, the ashes exceed the garbage to an extent which prevents combustion. The practice of the department of only cleaning out the garbage barrels twice a week is one which tends to the undue accumulation of refuse.

The latest phase in the garbage situation was the total arrest of its removal by the Health Department for want of funds. Under these circumstances, the matter has been taken out of the hands of the Health Committee by the Mayor and placed under the control of the Road Department. We hope that the Road Department which has the cleaning of the streets, may do better with the garbage than the Health Committee. Why one department should clean the streets and another the lanes, we never could thoroughly comprehend. The cleaning of the lanes and incineration of garbage seems properly to belong to the Street Cleaning Department, who should be made to do it in a way consistent with the health of the city. In like manner the Water Department may safely be intrusted with furnishing water

with the understanding that they furnish a supply which the Health Department will approve of.

If the Road Department succeeds in dealing effectively with the garbage, by all means let them continue to do so. In that event the Health Committee may at last find some leisure thus to bestow some attention upon sanitary matters proper. For instance, they might exercise a little supervision over the quality of our water supply which just now seems to require it.

As to the abstract question of garbage disposal, the general concensus of opinion among sanitarians, is that it would best be dealt with by the householders burning it in their own kitchen stoves and that the whole garbage problem largely arises out of slovenly housekeeping. Any householder who wishes to consume his own garbage can do so with the aid of his cook, and if all the houses in one block combined to do this there would be no nuisance in that block, and a little apparatus designed for this purpose by Dr. Durgin, of Boston, will, if introduced into the kitchen stove-pipe, materially help him in this task.

POSTPONEMENT OF THE THIRD PAN AMERICAN MEDICAL CONGRESS.

INTERNATIONAL EXECUTIVE COMMISSION OF THE PAN AMERICAN MEDICAL CONGRESS.

OFFICE OF THE SECRETARY.

CINCINNATI, Nov. 5th, 1898.

SIRS:

I have the honor to announce that in April, 1898, I received from Dr. José Manuel de los Rios, Chairman of the Committee on Organization of the III Pan American Medical Congress, a request that, in consequence of the then existing rebellion in Venezuela, no definite arrangements be made at that time relative to the meeting of the Congress previously appointed to be held in Caracas in December, 1899.

The following communication relative to the same subject is just at hand:

CARACAS, September 25, 1898.

DR. CHARLES A. L. REED,

Secretary of the International Executive Commission, Cincinnati, Ohio.

DEAR SIR:

After having sent my communication dated April last, I find it to

be my duty to notify you that, although the considerations pointed out in it have already ended, our country has been scourged by small-pox, which has taken up all our physicians' activities and time, depriving them of going into scientific works. And, as that state of mind of our people and government after such calamities as war and epidemic, would greatly interfere with the good success of our next meeting, I beg leave to tell you, in order that you will convey it to the International Executive Committee, that our Government and this Commission would be grateful to have the meeting which was to take place in Caracas in December, 1899, adjourned for one year later. I am, dear Doctor,

Yours respectfully,

THE PRESIDENT.

(Signed) DR. JOSÉ MANUEL DE LOS RIOS.

In accordance with the request of the Government of Venezuela and of the Committee on Organization, the III Pan American Medical Congress is hereby postponed to meet in Caracas in December, 1900.

For the International Executive Commission.

CHARLES A. L. REED,
Secretary

Obituary

HENRY P. WRIGHT, M.D.

Our many readers will, ere this, have learned with regret of the unexpected early death of Dr. Henry P. Wright, of Ottawa, a well known and much loved physician.

He was a remarkably fine character in many ways, and it is not too much to say that he was admired and respected most by those who knew him best.

His extraordinary capacity for sustained professional work led him into the common error of overtaxing his vital powers. After his customary hard days-work, a late dinner party at Government House and a wind-up at a medical friend's house, where he was warmly welcomed by a large gathering of physicians, he retired to bed in the small hours and expired quietly and painlessly, no doubt from an arrested heart action.

Dr. Wright was a well known practitioner and had a warm place in the affections of many in the profession outside of Ottawa, where he laboured conscientiously for over 25 years. To his patients who received his unremitting care he was all in all ; and the astounding outburst of affection shown by the populace at large at his funeral, when the cathedral at Ottawa was filled to the doors and then could not contain the mourners, spoke far more than words can tell of the loss the community had sustained.

Dr. Wright was born in Toronto and educated for the most part at the High School in Quebec. Entering the University of McGill College as a medical student at the age of 16, he graduated with honors, taking the final prize in 1871, and at once began practice. For a short time he settled in Mooretown, but soon came to Ottawa, where he made a reputation not easily simulated by ordinary men. He was fond of hospital work, and for many years occupied a high place on the staff of the County of Carleton General Protestant Hospital.

He was President of the Canada Medical Association in 1885.

Owing to a disagreement with the Board of Directors of the above-named hospital, he, with the entire staff, resigned in December, 1896, and largely to his force of character and earnestness of purpose St. Luke's General Hospital was organised. Dr. Wright lived to see St. Luke's consummated, and was chairman of its Medical Board at the

time of his death, as well as a life member of its Board of Governors. The success of this new hospital was very dear to him, and his last words at Dr. Powell's house were spoken in response to the toast of his favaurite institution, when he predicted for it a useful and honorable career.

The best memorial to Dr. Wright is St. Luke's General Hospital, Ottawa, and already his many friends have started an endowment fund for the support of the Public Wards to be known as the "Dr. H. P. Wright memorial." R. W. P.

GESTA MEDICORUM.

"QUICQUID AGUNT MEDICI NOSTRI FARRAGO LIBELLI."

Dr. Charles Ogilvy, of the class of '98, is at present interne at the Orthopedic Hospital, New York.

Dr. C. F. Martin, Lecturer in Medicine, McGill University, having left Berlin, where he was pursuing advanced work, is now at Graz.

Drs. R. Kerry and W. G. M. Byers have been appointed Clinical Assistants in the Ophthalmic Clinic of the Royal Victoria Hospital.

Dr. R. H. Craig who has recently returned from London and Vienna has commenced practice in Montreal.

Dr. Pennoyer, who graduated in '97, and then spent a year in the Montreal General Hospital has begun practice in Buckingham, and we understand, is already doing very well.

Dr. H. S. Birkett, Professor of Laryngology, McGill University, and Laryngologist to the Montreal General Hospital, has resigned the latter appointment to take a similar position in the Royal Victoria Hospital.

Notwithstanding the most elaborate precautions Vienna has been thoroughly alarmed, and with characteristic venom the anti-semitic press is taking advantage of the opportunity to stir up the prejudices of the populace alleging that the disease was imported by Jewish physicians.

The Undergraduate's Medical Society has elected the following officers: Hon.-Pres., Dr. G. E. Armstrong; Pres., F. Tooke, B.A.; Vice-Pres., J. Craig; Sec., J. E. Carnwath; Assist.-Sec., Leggat; Treas., F. S. Porter; Path., A. H. Gordon; Reporter, W. A. Wilkins; Council, Drs. Garrow, Lafleur and A. C. P. Howard, B.A.

Owing to the annexation of Hawaii by the United States, measures are being taken by the Board of Health of California to prevent the

introduction of leprosy which prevails more or less in Hawaii. Dr. Ruggles has been deputed to visit the island and ascertain to what extent leprosy prevails and what measures are necessary to prevent its coming to the United States.

The resident staff of the Montreal General Hospital consists of in Medicine, Drs. H. J. Schwartz and C. A. Peters; Surgery, Drs. W. L. Barlow and A. M. Smith; Out-Patient Surgery and Ophthalmology, Dr. F. W. Harvey; Out-Patient Medicine and Gynæcology, Dr. R. C. Patterson; Pathology, Dr. C. L. Brown; Anæsthetist Dr. W. W. Lynch; Surgical Registrar, Dr. H. W. Thomas.

At the Royal Victoria Hospital, in Medicine, Drs. Robertson, H. B. Cushing, B. W. D. Gillies, and W. O. Rose; Surgery, Drs. E. W Archibald, C. H. Brown, J. J. Roy and C. B. Keenan; Gynæcology, Drs. Barclay and Frazer; Ophthalmology, Dr. Smith.

The recent outbreak of Plague in Vienna has proved somewhat alarming, but it would look as if the precautions taken had been sufficient in as much as no new cases have developed. It began with the case of Barisch a "diener" in the pathological department attached to the Klinik Nothnagel, who became infected while attending to the experimental animals. Two nurses and Dr. Müller, the physician who attended him, took the disease and eventually Barisch's wife and another assistant became attacked. Altogether there have been six cases and three deaths. Dr. Müller who succumbed to the disease was the first assistant to Prof. Nothnagel and was very well-known for his active work. He was specially regarded as an authority on the Plague and on the blood. In 1897, together with Drs. Albrecht, Ghon and Poech, he was sent to Bombay by the Academy of Science to study the Plague.

The medical attendants of the Prince of Wales, have in the opinion of the Queen discharged their duties faithfully and well. Sir William MacCormic and Sir Francis Caking who as surgeon and apothecary respectively to the Prince, have mainly dictated the lines of treatment to be adopted, have been appointed Knights-Commanders of the Royal Victorian Order, and Mr. A. D. Fripp and Dr. A. G. Delmage, Fleet-Surgeon in the Royal Navy, who have had charge of the Prince during his extended yatching tour, have been appointed members of the same order. The Royal Victorian Order is a new order of Knighthood founded by the Queen a few years ago, and appointments in it are made exclusively as rewards for personal service to the Royal Family. These decorations should heal the wounds made by Dr. Lucas-Championnière in his severe criticisms of these gentlemen because they did not wire the fragments of the patella.

Canadian medicine and medical men were well to the fore in the proceedings at the recent meeting of the British Medical Association at Edinburgh : Dr. Peter's demonstration of a new and rapid method of making casts from anatomical and pathological specimens created wide interest, so that he had to repeat the demonstrations frequently. Dr. McCarthy's paper read by Dr. Shepherd upon the structure of the Hippocampus Major was perhaps the most novel contribution to the anatomical section, and the same may be said of Dr. Adami's paper read by Dr. Osler upon the Bacteriology of Cirrhosis in the medical section. In the physiological section Prof. A. B. Macallum contributed an article upon "Some points in the micro-chemistry of nerve cells," bearing upon the observations of one of his pupils, Mr. Scott, pointing out that Nissl's spindles in nerve cells are derived from the nucleus of the cell and are of the nature of a nucleo-proteid. He also brought forward in this connection, the most important work recently done by him upon the micro-chemical determination of the presence of phosphorus in these and other bodies. Dr. Shepherd took an important part in the discussion on the significance of Anatomical Variations.

At the October meeting of the Provincial Board of Health, among other business the following was enacted :

"The Provincial Board could not entertain the request made by the Health Department of Montreal to examine dairies supplying milk to their city and situated outside their limits, but will offer to give the city officials, whose work it should be, the necessary authority to visit the various diaries in which Montreal is interested in whatever parish they may be situated."

It was resolved to make it as widely known as possible, through the press, that the Board absolutely condemns the long tube feeding bottle for infants, and to earnestly recommend pharmacists and others to stop selling them, in the name of humanity, calling their attention to the fact that in some countries their sale has been prohibited by law.

It was decided to amend the by-laws of the Board, so as to require the disinfection of urine in typhoid fever.

The president called attention to the fact that there had been a remarkable increase of typhoid this year in Montreal, and as an increase in typhoid prevalence always points to the possibility of contamination of the water supply, it was decided on the suggestion of the president, to recommend to the city of Montreal to make a full investigation of their water supply, to determine if the time has not come either to purify the water by filtration previous to its distribution, or to give up entirely the St. Lawrence river water and bring water from the lakes or other sources above all suspicion.

NEW BOOKS, ETC., RECEIVED AND NOTED.

A Manual of Otology. By Gorham Bacon, B.A., M.D. With an Introductory chapter by Clarence John Blake, M.D. New York and Philadelphia, Lea Brothers and Co., 1898.

A Text-Book of Materia Medica, Therapeutics and Pharmacology. By George Frank Butler, Ph.D., M.D. Second edition, revised. Philadelphia, W. B. Saunders, 1898.

Medical Diseases of Infancy and Childhood. By Dawson Williams, M.D., London. Lea Brothers & Co., Philadelphia and New York, 1898.

A Clinical Manual of Skin Diseases, with Special Reference to Diagnosis and Treatment for the Use of Students and General Practitioners. By W. A. Hardaway, A.M., M.D. Second edition, revised and enlarged. Lea Brothers & Co., Philadelphia and New York, 1898.

A Treatise on the Science and Practice of Midwifery. By W. S. Playfair, M.D., L.L.D., F.R.C.P. Seventh American from the Ninth English Edition. Lea Brothers & Co., Philadelphia and New York, 1898.

Practical Diagnosis. By Hobart Amory Hare, M.D. Third edition. Lea Brothers and Co., Philadelphia and New York, 1898.

Pathology and Morbid Anatomy. By T. Henry Green, M.D. Lea Brothers and Co., Philadelphia and New York, 1898.

The Medical News Visiting List, 1899. Lea Brothers & Co., Philadelphia and New York, 1898.

American Pocket Medical Dictionary. Edited by W. A. Newman Dorland, A.M., M.D. Philadelphia, W. B. Saunders, 1898.

The Care of the Baby. A Manual for Mothers and Nurses. By J. C. Crozer Griffith, M.D. Second edition, revised. Philadelphia, W. B. Saunders, 1898.

Practical Uranalysis and Urinary Diagnosis. A Manual for the Use of Physicians, Surgeons, and Students. By Charles W. Purdy, M.D., L.L.D. Fourth revised edition. Philadelphia, New York and Chicago, The F. A. Davis Company, 1898.

Histology, Normal and Morbid. By Edward K. Dunham, Ph.B., M.D. Lea Brothers and Co., New York and Philadelphia, 1898.

Transactions of the Association of American Physicians. Thirteenth Session. Vol. XIII. Philadelphia, Printed for the Association, 1898.

Transactions of the American Surgical Association. Vol. XVI. Edited by De Forest Willard, A.M., M.D., L.L.D. Printed for the Association, 1898.

Cleft Palate. Treatment of Simple Fractures by Operation. Diseases of Joints, Antrectomy, Hernia, etc., etc. By W. Arbuthnot Lane, M.S. London, The Medical Publishing Company, Limited, 1898.

Essentials of Materia Medica, Therapeutics and Prescription—Writing arranged in the form of Questions and Answers prepared especially for Students of Medicine. By Henry Morris, M.D. Fifth edition, revised and enlarged. Philadelphia, W. B. Saunders, 1898.

A Primer of Psycology and Mental Disease. By C. B. Burr, M.D. Second edition. Philadelphia, New York, Chicago, The F. A. Davis Co., 1898.

Affections Chirurgicales du Tronc, Statistique et Observations Par le Dr. Polaillon. Paris Libraire, Octave Doin, Editeur, 1898.

Glaucoma, with Detachment of Retina. By William Cheatham, M.D. Reprinted from Annals of Ophthalmology, July, 1898.

Orthoform and Extract of Suprarenal Glands. By W. Cheatham, M.D. Reprinted from the American Practitioner and News, August, 1898.

Insomnia. By I. J. Higgins, A.M., M.D. Reprinted from the Journal of Medicine and Science, August, 1898.

Chloroform, Its Absolutely Safe Administration. By Robert Bell, M.D., F.F.P.S. Glasgow, Robert Love Holmes, 1898.

A Contribution to the Study of the Symptoms of Chronic Urethritis. By Ferd.

C. Valentine, M.D. Reprinted from The Journal of the American Medical Association, August, 1898.

The Aseptic Animal Suture, Its Place in Surgery. By Henry D. Marcy, A.M., M.D., L.L.D. Reprinted from the Journal of the American Medical Association, August, 1898.

Homymous Torsion, A Position of the Retinal Meridians hitherto unrecognized. By Edward P. Brewer, M.D., Ph.D. Reprinted from Ophthalmic Record, September, 1898.

Statistique des Opérations Pratiquées au Mans du 1er janvier au 31 décembre 1897, par H. Delagéniere. Reprinted from Archives Provinciales de Chirurgie, March, 1898.

Notes on Malaria in Connection with Meteorological Conditions at Sierra Leone. By Surgeon-Major E. M. Wilson, C.M.G. Second edition. London, H. K. Lewis, 1898.

A Text-Book of Pathology. By Alfred Stengel, M.D. Philadelphia, W. B. Saunders, 1898.

The Natural History of Digestion. By A. Lockhart Gillespie, M.D., F.R.C.P. Ed., F.R.S. Ed. London, Walter Scott, Ltd., 1898.

Manual of Diseases of the Skin, with an Analysis of Twenty Thousand Cases and Formulary. By L. Duncan Bulkley, A.M., M.D. Fourth edition, revised and enlarged. G. P. Putnam's Sons, New York and London, 1898.

A Pocket Medical Dictionary. By George M. Gould, A.M., M.D. Philadelphia, P. Blakiston's Son & Co., 1898.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXVII. DECEMBER, 1898. No. 12.

Original Communications.

PNEUMOTHORAX, ITS ETIOLOGY, SYMPTOMS AND SIGNS WITH A STUDY OF TWELVE CASES.

BY

W. F. HAMILTON, M.D.,

Demonstrator in Clinical Medicine, McGill University; Assistant Physician, Royal Victoria Hospital.

The following cases, with but one exception, have been observed in the wards of the Royal Victoria Hospital, and form the sum total of such cases treated in that institution since its opening. I am greatly indebted to Drs. James Stewart and Bell for permission to study and report their cases.

CASE I.—H. M., male, aged 30, admitted May, 1897, re-admitted in August, again re-admitted Jan. 1898. He presented when first admitted marked pleural effusion of the left side. From the history given it was chronic and of undoubted tubercular origin The onset was marked by severe pain in the side, with dyspnœa and, after several weeks, with an audible splash, first heard by the patient himself. Two years previous to this onset, his health had failed him somewhat, and he was the subject of cough with expectoration. The family history gave no evidence of tuberculosis. The patient never spat blood. The heart was much displaced to the right, the coin sound was absent and succussion was not made out. The amount of fluid present was so great that aspiration was urgently indicated and several ounces were withdrawn with considerable relief to the patient. After some weeks the splashing sound of which the patient previously complained returned.

The general condition of the patient was much improved for several months, and though the displaced heart returned partially to its normal position after aspiration it remained permanently to the right

where it was doubtless held by pleuro-pericardial adhesions. The compressed lung never re-expanded, but occupied a small portion of the thorax posteriorly towards the apex and the middle line. Numerous aspirations were made and finally in Feb. 1898, a portion of the 8th rib was excised on the left side posteriorly, and large quantities of pus continued to discharge until the patient died, Aug. 29th, 26 months after the occurrence of this complication. All the physical signs together with a fairly characteristic onset of pneumothorax were present in this case, and the patient afforded a striking example of how pneumo-thorax may arrest the progress of pulmonary tuberculosis. This arrested state was inferred from the following facts. The quantity of expectoration was greatly diminished. There was a total absence of febrile movement for several months, except after the application of the tuberculin test. The patient during this period showed little tendency to emaciate. The case terminated with signs of sepsis and chronic diarrhœa, doubtless of tubercular origin. Clinically the opposite lung showed but few traces of disease.

Case II.—J. L., aged 17, male, was admitted March 20th, 1895, with left-sided pneumothorax of tubercular origin. The onset was sudden, with severe post-axillary pain in left side four months previous to admission, when he felt something giving way in his lung, followed by marked dyspnœa. This was more marked on exertion. His previous health had not been good. For nine months he had had a cough with loss of flesh and weakness. His condition on admission was afebrile, respirations and pulse slightly accelerated. Signs of left pneumothorax were manifest in prominence of left side, character of the percussion note, metallic tinkling, coin sound and succussion splash. The course of the case was favourable, the temperature variable, sometimes febrile, sometimes subnormal. He was discharged, improved, four and a half weeks after admission. Physical signs were not materially changed.

Case III.—K. F., female, aged 38, with left-sided pyopneumothorax. The onset was indefinite. It was not possible to fix the date. Her health had been failing for a year previous. She had spent considerable time in bed; she coughed and expectorated, but never spat blood. Shortness of breath, variable in degree, had existed several months, but had never been severe until two weeks before admission. Six months after onset of illness, hence about six months before admission, she complained of splashing sounds on the left side of her chest, which were observed over a period of about six weeks, then disappeared. She noticed the heart palpitate on the right side of chest. She presented on admission, well-marked signs of effusion into

the left pleura, with compression of the left lung, and displacement of the heart. After two aspirations of 45 oz. of pus in all hippocratic succussion was obtained, while the coin sound and metallic tinkling were absent. The third aspiration was performed nine days after, after which metallic tinkling, the coin sound and succussion splash were elicited. The course of the case in the hospital was afebrile with but one exception and patient showed marked improvement, doubtless due to the aspiration. Further operations were not performed, as the patient left the hospital and was lost sight of. In this patient downward displacement of the spleen was observed, while her case affords a typical example of latent pyopneumothorax.

Case IV.—M. D. McM., aged 24, male, was admitted August, 1895, with pyopneumothorax of tubercular origin, left-sided. The onset had been sudden with almost total collapse. His previous health had been failing, marked by loss of flesh, cough, chills and fever, malaise and sweating at night. There had been slight expectoration of blood, Physical examination of the chest on admission showed cardiac displacement to the right; the left side of thorax was bulging, with a tympanitic note; the coin sound was present, but no succussion. Metallic tinkling on respiration was present and succussion was elicited after several weeks. It may be said, however, that the patient's condition did not justify the movements necessary to demonstrate the presence of succussion until several weeks after he was admitted. The pulse was constantly rapid, the temperature febrile during most of patient's stay in hospital and dyspnœa was a variable feature. The right lung showed signs of disease, manifest by localised pleuritic rub, and a few fine crepitant râles. The patient after nine weeks in the hospital accomplished a train journey of several hundred miles and lived for some months, fully seven months and a half after the onset of this complication.

Case V.—K. H., aged 14, female, was admitted on 11th of January, 1896, with right-sided pneumothorax, of tubercular origin. The previous health had been poor as shown by weakness, cough, hoarseness, feverishness. The onset was rather sudden, characterised by severe pain in right side, but no marked shortness of breath. Condition on admission was as follows: Febrile temperature, rapid pulse, dyspnœa, signs of apical infiltration of the right lung with pneumothorax over the lower portion of the thorax, shown in cardiac displacement to the left, dulness beginning one inch to the left of the left edge of the sternum, distant amphoric breathing. Tympanitic resonance, faint respirations, metallic tinklings, the coin test, were observed but no succussion splash. Thirteen days after admission succussion splash was

elicited over the right side. The patient died five weeks after the onset of this complication manifestly with general tuberculous infection as both lungs showed tubercular disease. She was delirious and diarrhœa was a constant feature.

Case VI.—K. N., female, aged 19, was admitted on Oct. 5th, 1898, with right-sided pneumothorax. The onset was sudden. The health had been failing, marked by loss of flesh, slight cough, tendency to take "cold," recent anæmia and weakness. One sister gave a history of tuberculosis. (More particularly; after a severe chill on awakening one morning and getting up, she returned to bed and slept for about two hours, to awaken again in profuse perspiration, with substernal pain, lasting for two days and then referred to her right side, with catchy breathing, amounting to dyspnœa).

Condition on admission; normal temperature, respirations 40, pulse, 100; with one exception the temperature remained normal throughout the following 18 days of stay in hospital. The pulse and respirations were not accelerated after the 4th day. Dyspnœa was not a marked feature. Attitude in bed was dorsal and lateral, without preference. The thoracic examination showed asymmetry, right side more prominent, hyper-resonance of the right side, weak respiratory sounds with moist râles of a peculiar metallic ring. Vocal resonance had a metallic ring also, the whispering was somewhat cavernous. Coin sound and succussion sound were absent. Cardiac displacement was marked, the mid-axillary line in the 7th interspace showing the apex pulsation. Dulness from above downwards began at the level of the nipple and transverse cardiac dulness began to the right of the mammillary line. Abdomen, right upper quadrant, showed evidence of displaced liver. The progress of the case was favourable throughout, dyspnœa diminished and a state of general wellbeing was experienced. The coin sound was elicited on the 8th of October, seven days after the probable onset, in a very limited area about one inch square just at the level of the seventh rib at the posterior axillary border.

Oct. 12th.—Four days later two other small areas were discovered giving this sign. One was found just below the angle of the scapula and was about the size of the bell of an ordinary stethoscope while the other about the same size was in the axillary space at the level of the 8th interspace.

Oct. 16th.—Yet four days later, the anterior and posterior areas above mentioned, *i. e.*, the first and third failed to give this note and the coin test was positive in one area only.

On Oct. 20th it was absent.

On Nov. 3rd it was still absent.

All metallic quality of voice and respiratory sounds have disappeared. The patient suffers no inconvenience except that due to over-exertion and is now attending to light house work.

Signs of fluid were never found.

Case VII.—J. P., aged 59, male, seen in consultation with Dr. H. S. Shaw, was one of pneumothorax of doubtful origin. Previously he enjoyed good health. On Nov. 27th, 1897, he fell and broke his leg. He remained under treatment in bed till Dec. 22nd, when some pain developed in right side of the chest. This pain passed away by 26th. On Jan. 1st, while still in bed severe right-sided pain developed and a few râles were heard over the area. On the 2nd a dyspnœic attack occurred and the signs of pneumothorax were manifest. The coin sound was obtainable widely over his right chest, weak distant amphoric breathing was present. The patient improved, signs of cardiac displacement disappeared, the coin sound also disappeared and was completely absent on 11th Feb., and March 1st patient was at work, and has been in good health ever since. The cause of this case is doubtful, and must remain so since there is no evidence either from the history or the physical signs pointing to tuberculosis, while the occurrence of such an event in one confined to one's bed by no exhausting illness inducing thrombosis or embolism, with subsequent localized pulmonary gangrene, renders a decision very difficult.

Case VIII.—H., male, aged 19. The date of onset is doubtful. His previous health had been good. While walking upon the street four or five months previous to admission he experienced dyspnœa. It was not severe, he continued his journey to his place of work performing his duties that day. Some thoracic pain developed after a few days, but no distressed breathing to interfere with his work. About three weeks ago, about Oct. 1st, while pulling on a hoist, he experienced dyspnœa and subsequently pain in the left side. On admission he presented signs of pneumothorax on the left side shown in cardiac displacement to the right side, fulness of the left chest with obliteration of intercostal spaces, hyper-resonant note throughout, metallic echo of vocal resonance, and faintly heard coin sound. There was no succussion. He was afebrile, not dyspnœic. The course of the case has been uneventful except that it is thought the left chest shows less fulness, while the area of cardiac pulsation is less prominent toward the right, succussion splash has not developed, the coin-sound is very variable. It is best heard when tested in the left supra-clavicular area and the lower portion of axillary space. It transgresses the median line, passing to the right above the junction of the 1st and 2nd pieces of the sternum. It may be heard also from axilla posteriorly

over the lower part of the thorax but this is doubtful. The patient presents the type of latent pneumothorax according to the French authors since there is at least attenuation of the pain and dyspnœa which so frequently usher in this condition.

The case is in all probability one of partial pneumothorax, for reasons which we may discuss later.

Case IX.—G., aged 19. This is the case to which reference will be made in discussing the etiology of pneumothorax, and will be given in sufficient detail there.

Case X.—M. L., male, aged 9. Pyopneumothorax, origin doubtful. Left pleura. He had been ill with signs of pulmonary disease, either of pleurisy or pneumonia or both, which set in with considerable pain and cough. On sitting up after two weeks in bed considerable thoracic pain and dyspnœa were experienced. The cause of his illness appears to have been empyema. There was no succussion nor coin-sound present. This patient was operated on, a resection of a portion of the 8th rib was done and drain introduced. The recovery was uneventful.

Case XI.—Female, E. H., aged 29. This patient was under treatment for pulmonary tuberculosis of several months duration. The disease was one of severe type and rapidly progressive. No signs of a complication with this condition were present, although signs of cavitation were described. The night before she died she complained of pain in the left lower axillary region. There were no other signs or symptoms recorded, denoting the presence of pneumothorax which was demonstrated by an autopsy and found to belong to the partial type, being situated about the upper lobe.

Case XII.—Male, aged 56. Left pyopneumothorax. The patient had been ill with pleurisy and empyema several months and had been frequently aspirated. One cannot fix the date of the pneumothorax. Hippocratic succussion and the coin-sound were both present. He died three weeks after operation, resection of a portion of a rib, and from the autopsy report it is evident that the original cause of the complication described was tuberculosis.

The Etiology of Pneumothorax.

Much interest has always gathered about the question of the etiology of the somewhat rare condition of pneumothorax which occurs according to good authorities in from 3 per cent. to 12 per cent. of all cases of pulmonary tuberculosis.

The anatomists of many years ago who taught that the arteries were air tubes, regarded the presence of air in the pleural sac as an

"exhalation" from the vsssels of the pleura involved. Then also its occurrence was explained by the process of gangrene of the pleura or by a process of decomposition in the pleuritic exudate found so often in such cases. A third explanation had reference to the most common condition—that of *perforation*—which is now the only recognized immediate cause.

Lænnec, who first taught directly concerning the presence of air in the pleura, described the cases under three classes: (*a*) Simple or essential pneumothorax; (*b*) the presence of air or gas together with fluid effusion; (*c*) air or gas with fluid effusion and a fistulous opening communicating with the bronchi.

Thus two forms may be included under the division of non-perforative pneumothorax, while the other, form (*c*) is classified as the perforative variety.

Concerning the first form, essential pneumothorax, authors did but little more than hint at the possibility of the secretion of air or gas by the pleural sac. Walshe, in speaking of the development of tympanitic sound over a pneumonic area asks, whether the phenomenon can depend on temporary secretion of air by the pleural sac. In referring again to this point in another section of his work on Diseases of the Lungs, he says: "It seems admissible as a bare possibility . . . . tympanitic resonance may be caused by air secreted by the pleura." This teaching, never positive however, has long since been regarded as fallacious, and thus one form of Lænnec's classification has passed away. Such an origin for the gas is physiologically impossible.

It was contended by Jaccoud in 1864 that there was no evidence for either form of non-perforative pneumothorax, but such cases were most likely due to minute pleural perforations which soon closed and the air was absorbed. In this opinion many high authorities concurred, among whom may be mentioned the names of Fagge and Powell.

Quoting from the former author we find as follows: "Most writers have admitted that in exceptional cases gases may be found in the pleural cavity as the result of chemical decomposition of liquid effusion, and perhaps by direct secretion (or rather exhalation) from the lining membrane. Such notions, however, accord ill with the general doctrines that are now held by almost everyone—and as neither of these supposed causes of pneumothorax has in its favour the slightest clinical evidence, we may now, guided by the experience of more than half a century, reject them altogether, and assume that air is never found in the interior of the pleural space except as the result of a

breach in the continuity of its surface, placing it more or less in direct communication with the external atmosphere."

This seems scarcely the teaching of the present day, however, and guided by the observation of the last decade, we may assume that simple pneumothorax does exist, or at least, such a condition without perforation, and gases may be formed within the pleural cavity and give rise to all the signs characteristic of that condition. Bacteriological examination into such cases has established the presence of gas producing organisms of anaërobic type.

Three case reports may be cited supporting this view. The first is that reported two years ago by E. Lévy, of Strasbourg, in which no perforation was found, but the exudate contained on two occasions an anaërobic micro-organism capable of producing gas in cultures as well as in guinea-pig tests. From the clinical history of his case, it would seem that this infection was one of secondary character, and in presenting his report Dr. Lévy makes a plea for essential pneumothorax.

The second is that reported in the Deutsches Archiv für Klinische Medicin, 61 Band. Dr. Richard May and Dr. Adolf Gebhart describe a case of pneumothorax of this class in which the gas formation was evidently due to the presence of the bacterium coli.

The third case is No. IX., in our series. A patient under treatment for a severe form of appendicitis, was operated on and four or five days later he developed signs of disease in the right lung and subsequently in the pericardium—signs leading to a diagnosis of pneumonia and pleurisy of the right side with hydropneumo pericardium. The autopsy confirmed the diagnosis and further revealed a pyo-hæmo-pneumothorax of the right side, as well as a pleurisy of the left side. The pericardial effusion was similar to that in the pleura, but the pus elements were more scanty.

An examination of the abdomen showed a suppurative track—a retroperitoneal dissecting abscess, extending upwards, traceable along the inferior vena cava to the diaphragm. Viewed from the pleural side no perforation was discoverable, but near that point where the inferior vena cava emerged through the diaphragm a reddish grumous broken-down area existed. The pericardium presented no such area suggesting even the possibility of perforation, although, as we have said, it contained ante-mortem and post-mortem signs of pneumo-pericardium.

Subsequent examination of the organs of this patient, as reported by Dr. A. G. Nicholls, in the *British Medical Journal*, of 1897, showed the presence of the bacillus aërogenes capsulatus in large numbers—and the gas found in the serous sacs was doubtless due to an infection with this gas producing bacillus.

Granting, however, that such cases of pneumothorax do exist, they are very rare, and each case suspected of being such must be carefully followed out in order to determine whether or not perforation is present, and if absent, what forms of organisms account for the formation of gases. Clinically such cases are scarcely within the range of precise diagnosis.

Pneumothorax occurs not infrequently in those apparently healthy, and many observers regard it possible that such may be really healthy. This observation gathers strength in the light of many such cases going on to recovery within a few weeks, leaving no sign of the cause of such a condition.

However, in such cases there is ample ground for doubt, and among those who oppose this teaching no one has done so more strongly nor more logically than Samuel West, who maintains upon the following grounds that in all probability a pulmonary lesion has given rise to a perforation under conditions of over-strain.

Perhaps all will admit the grounds upon which he reasons concerning this point. They are in substance as follows:

1. Lesions exist undetected clinically.

2. Recovery may be complete from pneumothorax, even though there be a tubercular process at the bottom.

3. The bursting power of a healthy lung is greater than could be exerted by any expiratory effort.

Doubtless many cases occurring in the apparently healthy are caused by tuberculosis.

Not only in the advanced cases with cavity formation may this complication occur, but an early case where small superficial cascating areas exist,—so small that they can not be discovered clinically—pneumothorax may develop while the subject of it is regarded as previously healthy.

Of interest under this division of the subject are the statistics of a large number of cases. Some years ago Biach collected from the records of 38 years the reports of 918 cases in three of the large hospitals in Vienna.

His table showed:

Tuberculosis in	715 cases,	76 per cent.
Gangrene of Lung	65	"
Empyema	45	"
Injury	32	"
Bronchiectasis	10	"
Lung Abscess	10	"
Emphysema	7	"
Necrotic Hæmorrhagic Infarct.	4	" Total, 888

Of the remaining 30 cases, 14 were undecided, while the other 16 were divided between thoracentesis, parasitic—peritoneal and intestinal origin—and carious changes in ribs and sternum.

Other observers show about 90 per cent. of cases due to tuberculosis.

In this group of 12 cases the causes are as follows: Tuberculosis, 5 cases; empyema, 2 cases; unknown, 4 cases; B. aërogenes capsulatus, 1 case.

Latent forms were found in (Nos. 3, 11, 8, 12) 4 cases.

Purulent fluid was demonstrated in 9 cases. No signs of fluid were found in 3 cases. Of the twelve cases, six are dead while two are at work, one under observation; one, a child running about; two others showed some improvement under treatment and were finally lost sight of. The left side was involved 8 times, the right side was involved 4 times.

There were 7 men, 3 women, and 2 children, 9 and 14 years of age, and the length of time varied from 2 days to 26 months.

The Diagnosis.

The diagnosis of pneumothorax is not always made clinically. Much stress has been laid upon the two *symptoms* which frequently mark the onset, viz., pain and dyspnœa, while in addition sometimes a sense of tearing or a crackling is realised in the chest. The dyspnœa may amount to orthopnœa,—the pulmonary insufficiency of Wintrich. These, however, may be absent or so slight as to pass unnoticed, as Pierre Angereau has recently pointed out, and the presence of air in the pleural sac may be discovered incidentally when making an examination in the usual way.

This author whose monograph has been published recently deals with the subject of such forms of pneumo-thorax which he terms *latent pneumothorax*. Among other conclusions he states:

1st, that total pneumothorax is attended by much pain and dyspnœa;

2nd, that in partial pneumothorax pain and dyspnœa may be slight or wanting;

3rd, that there exist forms of general pneumothorax absolutely *silent* in their symptoms without pain or dyspnœa.

Lévy is cited by Angereau as saying that partial pneumothorax in its insidious onset is generally in the advanced cases of tuberculosis.

As factors which may mitigate the severity of the symptoms pain and dyspnœa usually noticed on the onset, one may consider the size of the perforation; the directness or indirectness of it; the presence of adhesions, preventing sudden and complete collapse of the lung; the condition of the patient, whether weakened or not; the presence of fluid, already calling for considerable accommodation to this new condition, viz., the use of one lung.

The signs of pneumothorax are as follows:

(1.) Displacement of the heart and mediastinum.

(2) Tympanitic resonance over the greater part of lung area, with feeble breathing and dulness at the base.

(3) Metallic sounds, including metallic tinkling and metallic echo—the *bruit d'airain.*

(4) Hippocratic succussion.

1. Displacement of the heart or mediastinum does not always occur it is true, yet so constant a sign is it that it is remarkable how recently only it has been described. Notwithstanding the writings of Lænnec and others on this subject, it remained to M. Gaide in 1828 to describe and lay special stress upon this as a point in diagnosis. One may readily suppose that in such cases where strong pericardial and pleural adhesions have been formed as well as in those where the opposite lung is consolidated, such a mediastinal displacement would not be found.

So quickly does this displacement take place that even before the first severe pain following the perforation is over, the heart cannot be found in its normal place.

I recall the remark made by the first patient whom I had under treatment with this condition. He was a very intelligent young man recently at Saranac Lake for phthisis. One day after dinner, while lying upon his bed, he was seized with a severe pain in his left side and experienced a faint feeling. "Believing," as he said, "it was heart failure, I put my hand in my bosom to feel my heart beat, but it could not be found in the right place." Shortly after, his physician found the apex of the heart in the region of the right nipple and every characteristic sign of pneumothorax well marked.

It would appear that such a change of position must arise from one of two possible causes, either increased intrathoracic pressure by which the heart and mediastinum are pushed over, or diminished traction of the elastic lung on the affected side, leaving the other in a normal state of elasticity unopposed. From the rapidity with which cardiac displacement takes place, as shown by clinical observation and experiment, it is pretty well established that increased intrathoracic pressure does not at first exist. Again the lung of the affected side loses its elasticity. Hence we may believe that the heart is pulled, rather than pushed toward the healthy lung.

2. The characteristic variety of percussion note is readily understood, but in this, considerable variation may be observed owing to the tension of chest wall. When pneumothorax occurs, in a very large percentage of those cases where life is prolonged, some form of fluid exudate developes in the pleura. Generally a purulent pleurisy is in-

duced, and then the characteristic basic dulness is found, but only after considerable effusion has been poured out.

3. Metallic sounds are not characteristic of pyopneumothorax, since they are sometimes heard in other thoracic conditions. Yet they are very frequently associated with the condition, and even the coin sound or *bruit d'airain* may be heard over large smooth-walled cavities. Indeed, according to Osler's note recently published, this sign was present and a localized pneumothorax was strongly suspected. The autopsy revealed a large cavity, the walls of which were covered with "granulation tissue and presented here and there papillary projections which, on section, contained remnants of branches of the vessels and bronchi."

This sign is not always present, and it has been seen to vary from time to time in the same subject.

4. Hippocratic succussion is a conclusive sign, concerning the presence of air (gas) and liquid simultaneously within a cavity.

A question in the diagnosis of perforative pneumothorax often arises, whether one has a valvular or free opening, or if the case is seen after this condition has been present for some time, whether there be any communication remaining between the bronchus and the pleural sac. Some have urged that one can decide upon this question by observing the character of the breath sounds. If one hears the inspiratory murmur and the expiratory murmur one must conclude that the air enters and leaves the pleural cavity. It would appear, however, from the history of several cases that this is not reliable, Such auscultatory findings show at most, perhaps, that air enters the lung involved and doubtless the changed character of the respiratory murmur is a product of collapsed lung and resonating chamber,—the pleura sac.

Powell, of London, in his work on Diseases of the Lungs and Pleura, holds, on the contrary, that an amphoric respiratory murmur is diagnostic of a free opening and of special value on this point is the expiratory portion of the amphoric sound.

Conclusions.

1. There is such a form of pneumothorax as the *non-perforative form.*

2. Latent pneumothorax is not infrequent.

3. Occurring in the course of pulmonary tuberculosis pneumothomay have a retarding effect upon the disease.

4. Recovery of a total pneumothorax may take place without any sign of fluid.

5. In the advanced cases of pulmonary tuberculosis, or at any rate rate where the patients were regarded as the subjects of pulmonary tuberculous, fluid is present and the prognosis is grave.

TABLE OF PNEUMOTHORAX CASES.

No.	Sex.	Age.	Side.	Mode of Onset.	Previous Health.	Cause.	Fluid.	Treatment.	Duration.	Termination.	Remarks.
1	M	30	L	Abrupt	Failing	Tuberculosis	Pus	Aspiration, rib resection	26 months.	Death. Asthenia.	Latent at first. Improvement of general health.
2	M	17	L	Abrupt	Failing	Tuberculosis	Pus	Rest in bed, tonics	5½ months.	Lost sight of	Improving.
3	F	38	L	Indefinite	Pulmonary disease	Empyema?	Pus	Rest, aspiration	8 months.	Lost sight of	Improved. Latent.
4	M	24	L	Very severe Abrupt	Pulmonary disease	Tuberculosis	Pus	Rest, tonics.	7½ months.	Death	In early stage.
5	F	14	R	Rather sudden	Very poor	Tuberculosis	Pus	Supporting	5 weeks.	Death	General infection. Both lungs. Delirium. Diarrhœa.
6	F	19	R	Rather abrupt, substernal pain	Recent anæmia, slight cough	Tuberculosis?	None	Supporting, creosote	5 weeks	Patient at work	Slight dyspnœa on exertion.
7	M	59	R	Onset sudden while in bed.	Good	?	None	Aspiration of air, creosote	No signs at end of five weeks	In health	Still at work, several months after.
8	M	19	L	Doubtful, pain and dyspnœa	Good	?	None	Rest	6 months? 1 month?	Comfortable	When quiet. Latent and partial.
9	M	18	R	Sepsis, pleurisy, pneumonia	Septic peritonitis, acute	Bacillus aërogenes capsulatus	Serous sanguineous	Palliative	2 or 3 days	Death	Pneumothorax and pneumo pericardium *without perforation.*
10	M	9	L	Rather sudden	Two weeks illness	Empyema	Pus	Rib resection	3 weeks	Health	
11	F	29	L	Insidiously	Failing	Tuberculosis	Purulent	Of tuberculosis	Not known	Death	Discovered post-mortem. Localized at apex. Latent and partial.
12	M	56	L	Not known	Ill one year.	Empyema	Purulent	Aspiration	Unknown.	Death	

ON THE BACTERICIDAL FUNCTIONS OF THE LIVER AND THE ETIOLOGY OF PROGRESSIVE HEPATIC CIRRHOSIS.

BY

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Since writing the paper upon Progressive Hepatic Cirrhosis which Professor Osler was good enough to read on my behalf at the Edinburgh meeting of the Association I have been employed without intermission continuing the series of studies therein indicated. These further observations have so expanded and modified the statements already made that I am pleased that what as regards this Journal was the premature publication of my paper elsewhere permits me now to take up the subject in these columns in the light of further researches and further experience.

To recapitulate briefly my Edinburgh paper. I therein pointed out that investigations conducted in Nova Scotia upon a curiously localised enzoötic known as the Pictou cattle disease showed me that in this disease (the most characteristic lesion of which was a peculiar extensive cirrhosis of the liver) there was to be gained from the liver, lymph glands, bile, and occasionally other organs and fluids of the body, a characteristic polymorphous bacillus, which in the earlier stages of its growth outside the body resembles a diplococcus (*vide* Fig. 1) in the later stages became more bacillary, and again when seen in the tissues was present as a diplococcus surrounded by a faint halo. These forms, I may say, are especially abundant in the liver and the glands, and in general a large proportion of them do not take the stain. These non-staining forms are to be recognised as well-defined shadows having a characteristic brownish colour. In the liver the microbes are present, stained and unstained within the liver cells and to a less extent in the newly formed connective tissue. (Fig. II.) The germ is pathogenic for rabbits, guinea-pigs, and mice; and in these animals while death occurs before cirrhosis has had time for adequate development, the microbes are abundant within the liver cells. (Fig. III.)

Struck by many resemblances between this disease and the ordinary cirrhosis in man, I have examined sections from a series of twenty cirrhotic livers, and in them have found constantly an almost identical form present also in the main within the liver cells. These show themselves as minute diplococcus-like bodies surrounded by a faint

halo; they are so small as best to be studied under the one-eighteenth or one-twentieth immersion lens, although they can be made out, yet with some difficulty, under the one-twelfth immersion (*vide* Fig. II.). The method of staining found by me to demonstrate them most surely was by carbolised fuchsin followed by bleaching in the bright sunlight for several days.

As an appendix to my paper, I described a case of cirrhosis which had within the last few days come to the *post-mortem* table at the Royal Victoria Hospital. From the liver and other organs of this case was gained a polymorphous bacillus appearing in early cultures as a diplococcus, and later assuming a bacillary or diplobacillary form (*vide* Fig. IV). I pointed out that while in certain respects it resembled the colon bacillus, I must provisionally assume that it was a distinct species. More especially was I led to this conclusisn from the fact that upon lactose and glucose broth there was no fermentation of sugar, while preparations made to demonstrate the presence of flagella showed one, or at most a pair, of these, appearing to be terminal and not lateral.

Such, in brief, were the main facts gained by me up to the middle of July. Since then the subject has widened greatly, and I can here give but an epitome of my later researches, the full details of which will be published elsewhere.

Further study of the form isolated from the case of human cirrhosis and of cultures from a second case (for the material of which I am indebted to my friends, Professor Wyatt Johnston and Dr. Anderson) have conclusively proved that this form must be regarded as at most a variety of the colon bacillus. The colonies upon agar plates and tubes made during the first days of growth were much smaller than those obtained ordinarily from the colon bacillus. A growth on fresh acid potato, while visible, was less abundant than that formed by the stock bacillus, and was of a very pale fawn colour rather than brown, and, as already stated, sugars were not fermented, and lateral flagella appeared to be absent.

But now, with frequent transfers upon slightly acid glycerinated agar, the colonies have become larger, and after passage through the rabbit they are scarce distinguishable from those of the ordinary colon bacillus. Glucose and lactose broths are now fermented with a development of the proper proportion of gas (one-half the closed limb of a Smith's fermentation tube), films made from young cultures in broth and glycerinated agar, show abundant lateral flagella. No distinction can be made out in the behaviour in milk, litmus milk, and on fresh acid potato.

As with the colon bacillus, mice seem to be relatively unaffected by intraperitoneal or subcutaneous injections of the organism in question; rabbits are affected. In short, so far as I have studied the two forms, the only well-marked remaining difference between them is, that while the colon bacillus causes broth reacting 1.5° acid to phenolpthalein [1] to become generally turbid in from 24 to 48 hours, with the development of relatively little sediment, the forms isolated from the liver, spleen, and kidney of our case of cirrhosis induce so little turbidity of the medium that at the end of 48 hours it is still possible to read print through the test tubes; again the sediment is relatively abundant. Two series of cultures alone, one from the heart blood, the other from the kidney of my case of cirrhosis, still retain some of their original characters; they show feeble growth, imperfect fermentation, and marked liability to present the diplococcus form; but they also with frequent transfer appear to be approximating towards the ordinary colon type.

These facts, with other considerations to be mentioned later, lead me to the present conclusion that the micro-organism in question must be regarded as one of the very numerous varieties of the colon bacillus. A study of Dr. Wyatt Johnston's case has shown me that, along with similar atypical forms, the typical colon bacillus can be obtained directly from the liver in cases of cirrhosis. Again, looking up my previous *post-mortem* records, and Professor Flexner's note upon the bacteriology of the cases of cirrhosis, material from which he courteously sent me, I find that both of us have frequently obtained the colon bacillus from cases of this disease. So also Professor Kanthack concluded that the cultures which I sent to him two years ago from two cases of cirrhosis were those of the colon bacillus, although when first isolated these had certainly been atypical.

It is very possible that under this term "colon bacillus" we include numerous forms which the imperfections of our methods prevent us from properly distinguishing. But balancing all the facts of the case, I cannot lay down that there are adequate grounds for separating this one form from the main group. The only safe conclusion that I can come to is that the cultures of the colon bacillus isolated from the liver of cases of cirrhosis within a few hours after death may be found markedly attenuated or modified, only gaining typical characters after repeated subculture outside the body.

Making a parallel series of inoculations into rabbits with the cirrhosis form and our stock laboratory culture of the colon bacillus, the results tallied very closely. I will here, however, only mention one—but that one all-important for the full comprehension of the subject.

If 0.5 c.cm. of a 48-hour broth culture of either form be inoculated into the marginal vein of the rabbit's ear, within twenty-four hours the liver cells are crowded with forms which are in the main diplococci. Occasional streaks of three dots or of four can be made out; but whereas the individuals in the 48-hour growth prior to inoculation were present in the main as stumpy bacilli and diplobacilli, now in the liver these were present in a diplococcus form (*Vide* Fig. V).

As to the exact method of the passage of these bacilli into the liver cells, I am not fully prepared to make a statement. Dr. Maude Abbott is at present making a series of studies upon the subject. I can only here point out that (1) it is an observation frequently repeated, that the endothelium of the hepatic capillaries possesses pronounced phagocytic properties; (2) that Chiari has recorded similar results following the intravenous inoculation of a closely allied form (the typhoid bacillus); and (3) that the remarkable appearances presented can be easily reproduced, cautious staining with carbol-thionin giving excellent results.

It is clear from this one series of observations that the colon bacilli injected into the blood stream find their way into the liver cells, and, what is more, they are present in these in greater numbers than in the spleen, kidneys, or other organs; but what is equally remarkable is that at the end of sixteen to twenty-four hours in rabbits so inoculated, while the liver is so crowded with the bacteria, if streak cultures be made from the various organs, abundant colonies may be obtained from the spleen, the heart blood, and also, but to a less extent, from the kidney; but taking a considerable amount of liver juice, this provides relatively few colonies. So far, in these early cases, the bile has been found by us to be sterile. It would seem clear, therefore, that the liver cells do not act as excretory agents for the bacilli, but have pronounced bactericidal functions. Save for Chiari's observations upon the similar destruction of the typhoid bacilli, this remarkable and important function of the liver cells has so far, I believe, escaped general recognition.

As I shall proceed to point out, when we consider that the colon bacillus is the commonest form within the intestinal canal, and is present there in enormous numbers, the full significance of these observations becomes evident. The bacilli or diplococci thus seen in the liver within twenty-four hours after inoculation, are clearly in the main, if not dead, at least incapable of proliferating outside the body. That they are in the process of degeneration is shown, I am inclined to think, by their form and by the fact that they easily give

up their stain, and again, it seems to me, by the fact that when decolorised they have a peculiar brown tinge.

That the colon bacillus should thus appear within the tissues as a coccus or a diplococcus form rather than a bacillus is somewhat difficult to realise. Certainly one's experience in the bacteriological examination of sections of the appendix removed for appendicitis—an experience which here in Montreal is extensive, and in which again the colon bacillus is the form most commonly to be recognised—had not prepared me to recognise that in these diplococci often surrounded by a faint halo I was dealing with the colon bacillus or some variety of the same. Nevertheless, my observations have made this absolutely certain, that not only in the liver, but in the lymphatic glands, and, indeed, in the kidney and spleen the colon bacillus is liable to assume the above form. I have now been able to recognise in the tissues a series of forms from the easily distinguishable and typical bacillus through the diplobacillus, formed of two stumpy members, to a stumpy bacillus, either alone or still as one member of a pair, in which the main body is unstained and so appears as a halo, while along the main axis are to be recognised two fine spherical bodies giving the appearance, as above mentioned, of a diplococcus. I begin now to understand the very frequent diplococci seen in the routine examination of sections of *post-mortem* material, when cultures have revealed not a single diplococcus lanceolatus or other coccus form.

What is more, I have been able to reproduce a like series of appearances outside the body. It is interesting to note that in the early stages of rapid growth in nutrient broth the bacillus is frequently represented by diplococci of fair size, and where the short stumpy bacterium form predominates, proper staining with fuchsin, and decolorisation, gives the appearance of more intense polar staining with a clearer central space. Again, in older growths the bacillary forms when stained to the proper extent, and when examined under a high power, appear to be composed of an obscure string of spherical bodies united by a common investing substance.

I find, however, that when the bacillus has been grown in broth or upon agar, close to the upper temperature limit of growth and under certain other conditions unfavourable to active proliferation, then these interior bodies, whatever be their nature, are most easily demonstrable, so that a long bacillary form is seen to be composed of an investing relatively colourless ground substance in which are disposed either a row of deeply-stained spherules; or again, each of such spherules, which at first appears to be somewhat oval, can be resolved into a pair of gonococcus-like bodies, the division between which is roughly at right angles to the long axis of the bacillus.

I will not here pretend to lay down what is the nature of these bodies: to call them nuclei or pronuclei would, in the present state of our knowledge, be if not absurd at least indefensible. Their arrangement is, however, very remarkable, and appears to be ultimately related to the vital functions of the bacillus. Here, again, abundant work is necessary before their full meaning is elicited.

Another series of observations begun by me is an examination of sections from some 200 portions of liver preserved from the necropsies at the Royal Victoria Hospital during the last three years. These I have selected from cases in which examination with ordinary stains has shown the absence of anything that could be spoken of as cirrhosis. So far I have already examined only 40 of these, but in this series of sections, to my surprise and, I must acknowledge, temporary confusion, I have found with scarce an exception indications of the presence of these shadows of the colon or allied bacilli. I stained these sections by carbolised fuchsin and bleached them in the sunlight and while I have found in them very rare deeply-staining diplococcus forms and still rarer typical colon-like bacilli, it is the minute brown shadows, namely, the unstaining diplococcus-like bodies tending to be surrounded by a halo that I have almost constantly come across. So common is the appearance, that in the three cases in which I have failed to recognise it I am inclined to ascribe my failure to insufficient study. In other words, not a little of the fine brown pigmentation recognisable in the liver cells apparently healthy (but not all) is an indication that colon—and presumably other—bacilli have been taken up by the liver cells and have there been destroyed. This statement I know will be doubted, but I make it with a full sense of responsibility. I have experimentally, and in the organs, more especially in cases of cirrhosis, observed the successive stages, and I have no longer any doubt about the absolute correctness of the statement.

From this it follows, we must assume (1) that the colon bacilli in small numbers, are, in the healthy individual, constantly finding their way into the finer branches of the portal circulation; and (2) that one of the functions of the liver is to arrest the further passage of these bacilli into the general circulation, and to destroy them through the agency of the specific cell of the organ.

I have not as yet been able to make a parallel series of examinations of the mesenteric glands: I can only point out that in cases of hobnailed liver the appearance of sections of these glands when properly stained by carbol-fuchsin or carbol-thionin is remarkable. (*Vide* Figs. VI. and VII.)

It is scarcely necessary for me to point out the steps by which the

bacilli pass from the lumen of the intestine into the tissues, and so into the lymph and blood capillaries. Observations of Heidenhain, Ruffer, and others have demonstrated with the greatest clearness that leucocytes are continually passing out on to the free surface of the intestinal mucosa, and that a large number of these, laden with fatty particles, bacteria, and other matters, find their way back into the submucous layer.

These observations at first sight would appear to wholly controvert the view that there is any necessary connection between the presence of more or less modified colon bacilli, or varieties of the same, in the liver and the development of ordinary progressive cirrhosis. It may be argued that inasmuch as such forms are constantly to be found in the liver, it is clear that the bacillus can have no power to induce excessive connective tissue formation, for otherwise every living being should suffer from cirrhosis. But there is this to be noticed: in the ordinary liver in which cirrhosis is absent, the forms visible are almost all corpses, and even long action of strong carbolised fuchsin will not lead them to become stained. In cirrhosis, on the other hand, while there are many of these non-staining forms, areas can be made out in which diplococcus-like bodies stain deeply. Either they have only recently entered the organ and are just killed, or they are still alive though in a form so attenuated, that it is only with difficulty that cultures can be gained from the organ. I still cannot but consider that the very great number of these forms found in well-marked advancing cases of cirrhosis is ample evidence that there is a direct connection between these and the process. So, also, in those advancing cases of cirrhosis my observations show me that the mesenteric glands are crowded with a diplococcus form of the bacillus, just as I found them crowded in cases of Pictou cattle disease.

In favour of this contention that there is a relationship between the presence of these diplococcus forms and the development of ordinary cirrhosis, the following considerations appear to be of weight:

1. The very great number of these forms found in the liver in well-marked progressive cases of ordinary hepatic cirrhosis.

2. The coincident great number of the same recognisable in the mesenteric lympathic glands, there being in this a close parallelism to what is seen in the Pictou cattle disease.

3. The parallelism in general between the bacteriology of these cases and that of Pictou cattle disease. Up to the present time my investigations upon the micro-organism of this disease show that, while very closely allied in form and characters to the colon bacillus, it is and remains a distinct species. Repeated subculture during the

last three years has not brought it nearer to type, if I may so express it. The agar colonies of the bacillus are much smaller than those of the ordinary colon bacillus; it does not ferment lactose or glucose, and does not yield the indol reaction, while upon acid potato the superficial growth is so slight as to be almost invisible, and I have found inoculations fatal to mice—animals not killed by the colon bacillus.

The constant discovery of this form in animals afflicted with the Pictou cattle disease renders it a most reasonable supposition that there is a direct relationship between its presence and the development of the disease. At the same time it is to be borne in mind that, so far, by simple inoculation, although rabbits, guinea-pigs, and mice are killed—and that on the average after relatively long periods (fifteen to thirty days in the two former animals)—I have been unable to reproduce the cirrhotic change in the livers of the same. It may be that the time elapsing between inoculation and death is too short to permit extensive fibrosis to develop, but it may well be that some additional factor is necessary to cause the cirrhosis in the cattle as in the inoculated animals, some prior or contemporaneous action upon the liver cells favouring the multiplication of the bacteria, or aiding the pathogenic action of their toxins upon the hepatic tissues.

Had further work upon human cirrhosis confirmed my first impression that the form isolated possessed individual features, and had further study revealed the repeated presence of such specific microbe in cases of the disease, it would also have been reasonable to assume cirrhosis to be due to the action of such a germ. But further study has shown that while one germ is to be detected in the livers of advancing cases of cirrhosis that germ is evidently the colon bacillus, more or less attenuated, it is true, but still a common form, and one which is habitually to be detected in livers presenting not a sign of cirrhotic change. If, therefore, there is any relationship between the presence of such a form and the development of the disease, clearly some other factor or factors must be at work. But beyond the point that there is this remarkable abundance of modified colon bacilli in the liver and in the mesenteric glands in cases of ordinary cirrhosis, I can at the present moment bring no further facts forward. To state positively what is the additional factor or factors requires experiments which necessitate months to bring to a definite issue. One may undoubtedly hazard a very shrewd guess as to what they must be. If the bacilli gain entry into the system through the intermediation of leucocytes, then a subacute enteritis or gastro-enteritis appears to afford the necessary localised determination of leucocytes, and such subacute or chronic gastro-enteritis is a very familiar feature in

the clinical history of cirrhosis in man. If some depression of the functions of the hepatic cells be requisite, then we know that alcohol, the main predisposing cause of ordinary cirrhosis, has a direct action upon the hepatic parenchyma. Indeed Ramond[2] would seem already to have had a slight measure of success in the experimental production of hepatic cirrhosis, by giving to animals by the mouth alternating doses of alcohol and bacterial toxins over long periods. It is along somewhat similar lines that I am at present working, employing not toxins but cultures of the colon bacillus alternated with alcohol. The result will show whether this will give to us the solution of the cirrhosis problem.

I am the more inclined to be cautious, in that the conclusions reached in the appendix to my Edinburgh paper, although stated to be provisional, may naturally have raised expectations as to the specific nature of ordinary cirrhosis which this further contribution to the study must overthrow. It is so novel and unexpected a discovery that in the tissues the colon bacillus may be represented by a minute diplococcus-like body that I cannot but feel that for the statements contained in my Edinburgh paper no apology is needed.[3] The recognition of this diplococcus-like modification in itself modifies and expands the subject to such an extent as to open up a very wide field. For the present I shall be amply satisfied if I have adduced evidence favouring the view that after all what—in the absence of adequate classification—I prefer to call "progressive hepatic cirrhosis," is but one of the results of the entry of the colon bacillus and its products into the system.

In conclusion, let me state again that I do not for a moment assume that all extensive fibrosis or cirrhosis of the liver belongs to the same category. I fully admit that syphilis, tuberculosis, typhoid, and perchance some of the exanthemata, may be followed by extensive laying down of new connective tissue in the liver. But in none of these conditions, with the possible exception of syphilis, does the cirrhotic change assume the peculiarly progressive and extensive type seen in the hobnailed liver and the varieties of the same. And, as to Hanot's cirrhosis, never having studied a case possessing the classical symptomatology of this disease I cannot make any statement.

References and Note.

[1] Procedures recommended for the Study of Bacteria, *Journal of Amer. Public Health Association*, 1898, p. 75; reprint, p. 38.

[2] *La Presse Médicale*, April, 21st, 1897.

[3] Of my previous observations, but one, I believe, has not been confirmed in my further studies. I refer to the observation that in the microbes isolated from a case of cirrhosis the flagella were terminal. In the earlier specimens, made by the Nicolle-Morax modification of Loeffler's method, I looked most carefully for lateral flagella and found none.

The specimens utilized for my camera lucida drawings appeared so definite that I forwarded it to Edinburgh, there to be demonstrated. Later specimens stained for flagella by the same method show most clearly the lateral arrangement and abundant flagella. Either the earlier attenuated forms were provided with few flagella, and those close to the ends, or the early preparations were defective. I am ignorant of any observations supporting the former view, and must, therefore, except the latter as the probable explanation. It is, however, interesting to note that the earlier observers upon the colon bacillus made a like mistake and accorded it to terminal flagella.

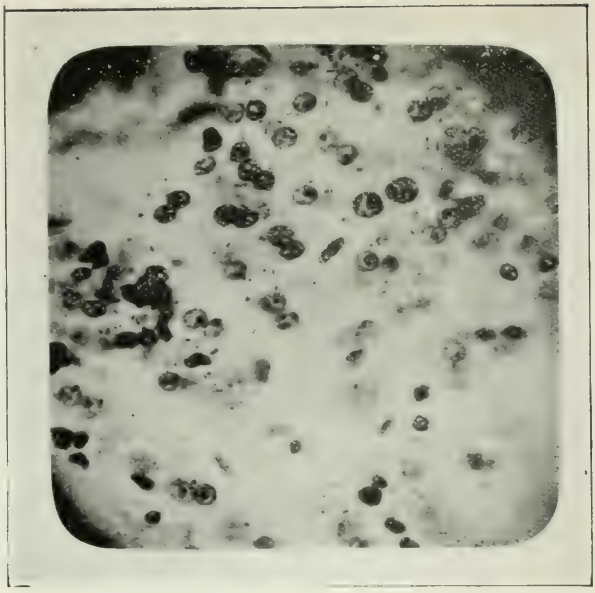
FIG. I.

Microbe of *Pictou Cattle Disease* from 24 hour old agar culture.
Stained Carbol Fuchsin.
Reichart $\frac{1}{18}$ immersion.
Zeiss camera lucida.

FIGURE IV.

Microbe isolated from case of Progressive Cirrhosis in man. Broth cultures from pipetta of heart blood 24 hours old. Stained Carbol fuchsin ; $\frac{1}{18}$ immersion and camera lucida.

Growth feeble and specimen over decolourised, so that diplococcus forms appear smaller than normal.



PICTOU CATTLE DISEASE.

Fig. III.—Section of Liver of RABBIT inoculated intraperitoneally with pure culture of microbe, and dying 21 days later. Treated like preceding and photographed under the same magnification.

Innumerable diplococcus forms in the main *within* the liver cells. Some, not perfectly in focus seen as ovoid bodies, others as dots (? end on ?) The varying size is apparently due to different degrees of bleaching (in part).

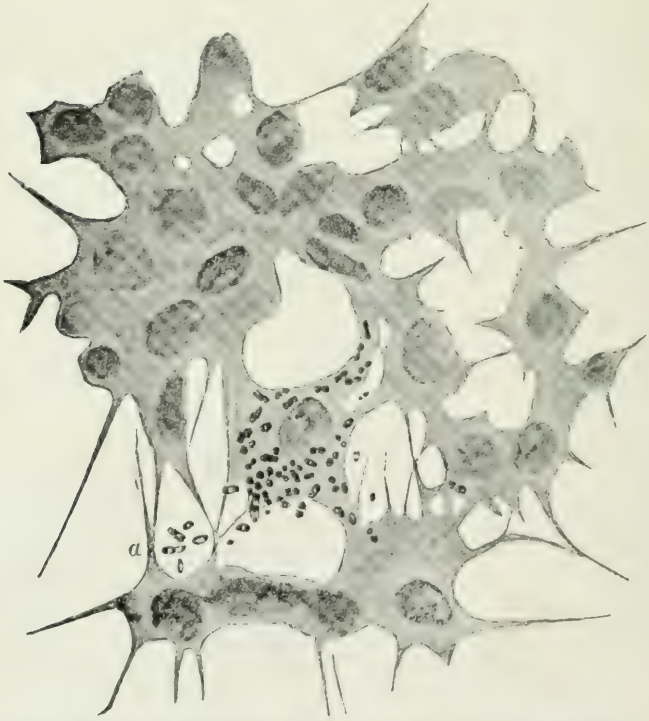
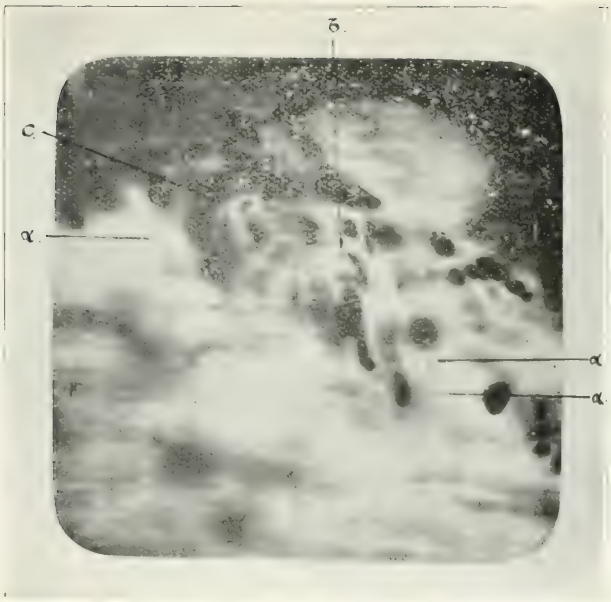


Fig. VI.—From section of mesenteric gland from case of portal cirrhosis. Stained carbol thionin, drawn under camera lucida. $\frac{1}{12}$ immersion lens (Reichert), Oc 4. The section shows portion of a lymph sinus with colon bacilli which have apparently undergone proliferation *post mortem* in one of the large lymph cells. At *a* either the staining is partial or the bacilli already show signs of degeneration.



PROGRESSIVE CIRRHOSIS IN MAN.

Fig. IV.—Section of Liver from case of more diffuse Cirrhosis than the preceding: treated similarly to preceding.
a.a. Diplococcus forms within degenerating liver cells.
b.b. The same in the immediate neighbourhood of what appear to be fusiform connective tissue nuclei.
c. Group of diplococcus forms in liver cell.

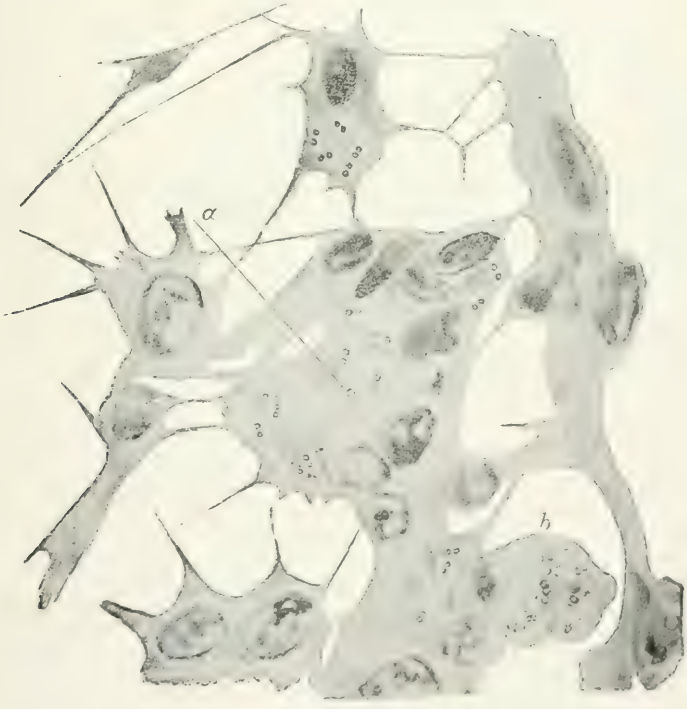
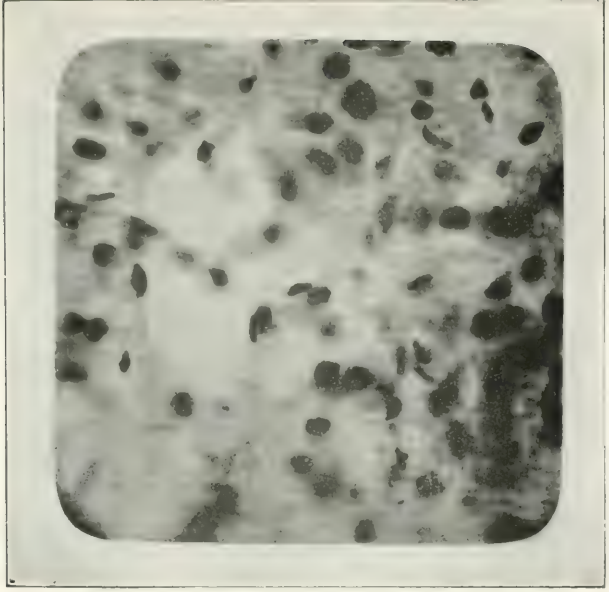


Fig. VII.—Another portion of the same section, drawn under the same magnification. Here in a lymph sinus some of the cells show in their protoplasm small clear spaces containing two, or more rarely three or four, fine deep brown spherules—shadows of colon bacilli. At *a* is shown the shadow (unstained) of some other form. At *b* is a large cell filled with fine pigment particles unsurrounded by halos. Elsewhere in the section were large accumulations of amorphous brown pigment.

identical appearance.



PICTOU CATTLE DISEASE.

Fig. II.—Section of Liver of Cow killed in course of the disease: Stained with Carbol Fuchsin 24 hours bleached in the sunlight for six weeks after mounting. Photographed under Reichert $\frac{1}{12}$th immersion.

A few of the diplococcus forms surrounded by a faint halo can be well seen: these appear to be largely within the liver cells. With a magnifying glass the position of several other germs not perfectly in focus, can be made out.

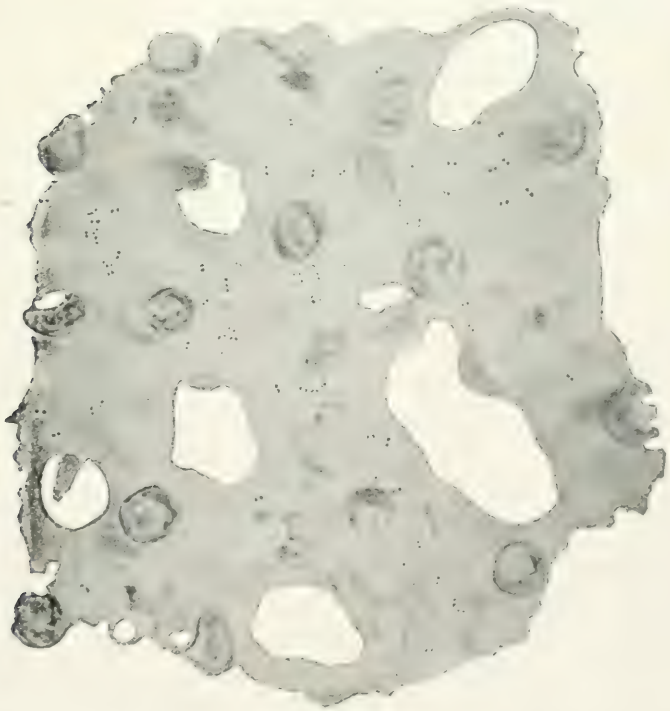


Fig. V.—From section of liver, stained by carbol thionin, of rabbit dying 16 hours after intravenous inoculation of 0.5 c. cm. of a 48 hour broth culture of bacillus gained from spleen of case of progressive portal cirrhosis. Drawing made by Zeiss's camera lucida, $\frac{1}{12}$ in. immersion lens (Winkel), Oc. 4. Sections from liver of rabbit inoculated intravenously with like dose of B. coli showed identical appearance.

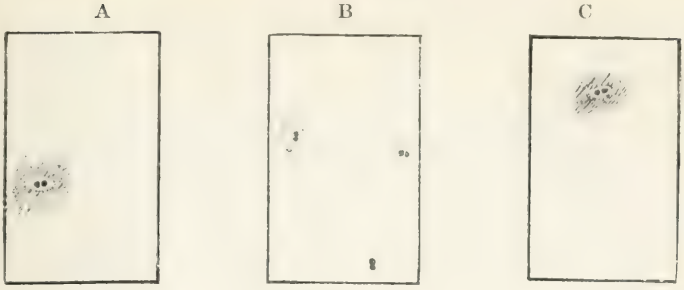


FIGURE VIII.

From slide preparations from agar (glycerinated) cultures made direct from pipettes taken at autopsy 52.98 on case of atrophic cirrhosis. Drawn with Zeiss's camera lucida. Reichert $\frac{1}{18}$th immersion. Stained carbol fuchsin.

A From Kidney juice pipettes, 24 hours growth.
B From Mesenteric Gland " " "
C From Ascitic Fluid " "

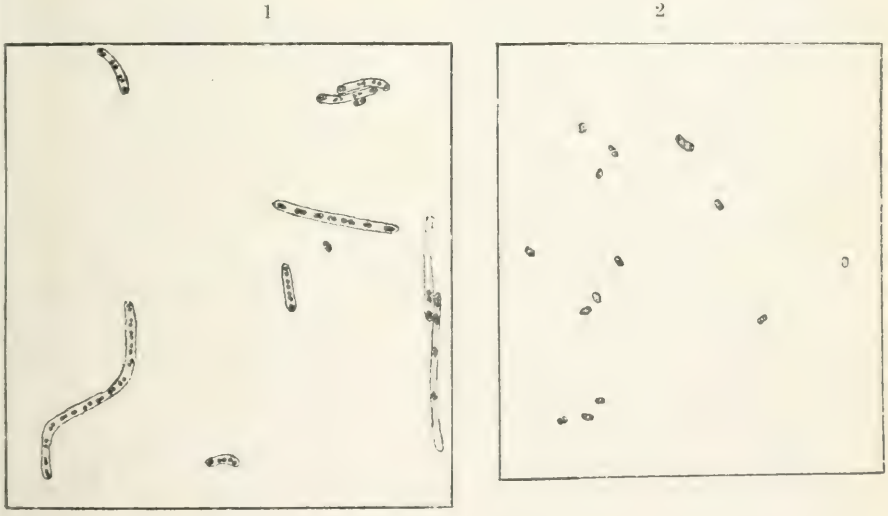


FIGURE IX;

Microbe isolated from case of Progressive Cirrhosis in man. To show extreme polymorphism.

1. From agar plate colony, plate made from isolated colony on glycerinated agar inoculated from spleen juice. Agar plate 5 days old. Shows long filaments composed of series of diplococci imbedded in sheaths.

2. From broth cultures 8 hours old, inoculated from colony on agar plate supplying the filamentous form.

INFECTIVE PERITONITIS, WITH SPECIAL REFERENCE TO A SUGGESTED METHOD OF IMPROVING THE PRESENT METHODS OF SURGICAL TREATMENT.

BY

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(Continued.)

Method of Treatment employed in the Case of Infective Inflammatory Conditions within the Peritoneum

Here I shall in no way refer to medical measures which may be adopted, but shall confine myself to various surgical procedures which are generally carried out.

In cases of general peritonitis, as I have already stated in the beginning of this paper, the adoption of every method recommended by surgeons of repute has been followed by unsatisfactory results, and in spite of the advocacy of each, favored probably by some happy experience of exceptionally successful operative procedures, it must be confessed that infective peritonitis is attended in the hands of the most skilful operators with a very high mortality.

I have already pointed out the great variations which follow the development of micro-organisms in the peritoneal cavity, both as regards the effects on the system, and the reactionary changes induced in the tissues exposed to the infection. I have also enumerated many observations and experiments showing the great part played by microbes contained within the bowel-lumen.

The accumulated facts which I have summarized, lead clearly to the realization of the difference which exists between an infective process started within the peritoneal cavity, and one developing in most other parts of the body, *e.g.*, arm, buttock, etc. The great difference is this, viz.: that the peritoneal cavity is in intimate relationship with an enormous storehouse of micro-organisms, viz., the alimentary tract from which the germs may pass with great readiness where any condition exists which diminishes the vitality of the bowel-wall.

Irrigation of the peritoneum with saline solution or boiled water has its advocates, but there can be no doubt that this method is not suffi-

cient to clean the peritoneum thoroughly, even where adhesions do not exist.

Reichel experimented with dogs and found that he could never save an animal by this method, if severe infective peritonitis was in progress. He also found, on putting fecal matter within the dog's peritoneum, that, after sponging and irrigating with as much as ten or fifteen litres of water, he could not clean the peritoneum from particles. Sponging alone is recommended by many, but it is no more advantageous than irrigation. The most satisfactory results are obtained where free drainage of the infected cavity has been carried out beforehand. Still this method, even though preceded by sponging or irrigation, has done but little to lessen the death-rate in infective processes within the peritoneal cavity.

In mentioning these methods I refer to them as being entirely disassociated from the use of antiseptics.

My aim in writing this paper is to urge the employment of a suitable antiseptic agent, associated with free irrigation and free drainage (and sponging in certain cases).

At the present time the employment of antiseptic solutions within the peritoneal cavity is very little in vogue. Formerly, various substances were employed by different operators, *e.g.*, weak boracic acid, salicylic or corrosive-sublimate solutions, but these have been gradually abolished.

The reason for this change was the establishment of the importance of preserving the integrity and vitality of the peritoneal endothelium. It then became evident that to use antiseptic solutions so weak as not to injure the peritoneum and yet not strong enough to destroy or inhibit the activity of microbes within the peritoneal cavity was a useless procedure. Another important consideration also had to be borne in mind, viz., the toxic influence on the system of the absorbed antiseptic.

It is evident, then, that an antiseptic which can be safely and effectively used within the peritoneal cavity must be one capable of being employed in solutions of such strengths as shall inhibit the activity of the microbes, or destroy them, and be non-injurious to the peritoneum. It must also be non-toxic to the system when used in effective quantities.

About two years ago my attention was directed to the new preparation known as formalin, and ever since I have used it largely in surgical work in cases where infective processes were at work.

Very soon after I began to use this antiseptic I became convinced of its great power in checking the activity and growth of pathogenic organisms.

Bacteriological experiments, also, carried out under my supervision regarding the influence of various strengths of solutions of formalin on different cultures, served but to corroborate published results made by various experimentors of repute.

About a year and a half ago I determined to test the effects of formalin in infective processes within the peritoneal cavity in the hope of being able to establish the value of its action, and to determine whether or not it would fulfil the requirements which I have mentioned above as pertaining to an ideal intra-abdominal antiseptic.

Before beginning to use it in the human subject I decided to test its influence in the peritoneal cavity of animals.

For this purpose I chose various breeds of dogs as being most serviceable, and as possessing a peritoneal coat less sensitive than that of the rabbit or guinea-pig—the other animals which it is most convenient to employ in the laboratory.

In certain cases I used the rabbit, and these will be noted later on. My main object was, in the first place, to determine the influence of various strengths of formalin solution on the peritoneum and on the system in general, and to find out the strongest solution that could be borne with safety.

One fact emphasized by all the experimentors is the powerful influence of this substance in inhibiting the activity of microbes. (It is believed by some that this inhibition is due to the transformation of the outer covering of the microbe into a hard, cheitin-like material.)

Of course, though such inhibition be not so effectual as the germicidal action of the drug, for all practical purposes the former influence is all that need be exerted in the treatment of the class of cases under consideration.

Indeed, in the case of formalin, to get an active and rapid germicidal influence, one would require to use strengths which would be decidedly harmful (I refer to solutions of 1 in 100 or thereabouts.)

NOTE.—It is very important in making up solutions of formalin to bear in mind the following points:

The earliest commercial preparation supplied was described as a forty-per-cent. solution of pure formaldehyde in water.

It has, however, been shown that many bottles are not of this strength, but are as low as thirty or twenty per cent., or even less. In the next place care must be taken, in making up a solution of a given strength—say 1 in 1000—to specify whether this is a strength relating to the solution in the bottle, or to the formaldehyde which is present in the solution. In my clinical and experimental work I have made up solutions in relation to the formaldehyde in solution. Thus, my

solution of 1 in 3000 is obtained by adding 8 minims of the forty per cent. formalin to 20 ounces of water.

I shall now detail the various experiments carried out by me in the physiological laboratory of McGill University.

I.—Effects of formalin on the normal peritoneum.

1. Pug dog. Peritoneal cavity opened into by a mesial incision, and thoroughly irrigated with 20 ounces of formalin solution (1 in 2000), several ounces being left in the belly when the abdominal incision was closed. Within an hour the dog was running about, having shown no signs of distress. He recovered perfectly, being apparently as lively after the operation as he was before.

2. Terrier bitch. The peritoneal cavity was opened, thoroughly irrigated with 40 ounces of formalin solution (1 in 1000) and then closed, several ounces being left behind. In a little over an hour the animal had fairly well recovered from the effects of the ether and had begun to run about. After a few hours she was apparently as well as before the operation, and continued perfectly normal, day after day, having exhibited no sign nor symptom of distress.

3. Terrier pup. Aged five months. In this case the same procedure was carried out as detailed in experiment No. 2. Within an hour the animal was running about and continued perfectly normal.

4. Rabbit. A similar procedure to the last was adopted, recovery following without any abnormal sign or symptom.

5. Terrier pup. Aged four months. Peritoneal cavity opened and irrigated with 30 ounces of formalin solution (1 in 500), normal saline being used to prepare the solution instead of water as in the first four experiments described. A few ounces were left behind and the abdominal incision closed:

Within an hour the pup was running about, continuing afterward as healthy and frisky as before the operation.

6. Terrier bitch. Procedure the same as in case of experiment No. 5, with the same successful results.

7. Terrier. The same experiment as in No. 5 was carried out, except that the formalin solution was made up with distilled water. A couple of hours after the operation the dog was quite lively, and for two days was apparently quite healthy. On the third day the animal became very weak, and kept very quiet; vomiting began and continued from time to time until next day, when death occurred.

Autopsy: Septic peritonitis was found, the intestines being intensely congested, and covered in places with thick lymph. Very little fluid was present.

Cultures were made and abundant growths of staphylococcus aureus were obtained; the bacterium coli commune was not present.

The infection of the peritoneum in this case was undoubtedly due to the fact that the dog gnawed away the dressings and some of the stitches on the second day after the operation, so that the incision became opened up, forming a free communication between the air and the peritoneal cavity.

8. Pug dog. The procedure carried out was the same as that described in experiment No. 7.

During the operation a considerable portion of omentum bound to the abdominal wall by adhesions was made free, resulting in the escape of some blood. The dog remained quiet during several hours following the operation, and continued languid during the next day. On the second day death occurred.

Autopsy: The dressings and stitches were found to have been gnawed away and the abdominal incision somewhat opened up. A couple of ounces of bloody fluid were found in the peritoneal cavity, but no signs of peritonitis were present. The fluid contained no formalin. Only a few staphylococci were found in it. The bloody fluid in this case had apparently come from the area of the separated omentum. The cause of death was not very evident.

The dog was in a weak condition at the time of operation, and probably had poor resisting power.

NOTE.—The above experiments clearly demonstrate that no ill effects follow free irrigation of the peritoneal cavity of the dog with lotions of formalin in strengths of 1 in 1000 and 1 in 2000.

Moreover, the absorption of a considerable quantity left in the belly is not followed by untoward results.

As regards the stronger solution—1 in 500—it is evident that in some cases it can be quite safely used.

The deaths which I have described in the case of two dogs in which this strong solution was used were probably due to accidental causes.

II.—Introduction of infective material into the peritoneal cavity followed by immediate irrigation with formalin solution.

1. Terrier pup, about six months old. The peritoneal cavity was opened and a broth-culture of staphylococcus aureus introduced (from a case of septic peritonitis). Shortly after the cavity was irrigated with 16 ounces of formalin solution (1 in 1000), a small quantity being left behind before closure of the abdomen. The dog recovered quickly from the effects of the ether and continued apparently quite healthy.

2. Terrier. A broth-culture of streptococcus was introduced into

the peritoneal cavity, the bowel and omentum being pinched and scraped in several places. Soon after the cavity was irrigated with 16 ounces of formalin solution (1 in 1000), several ounces being left in the belly. Recovery occurred without symptoms.

3. Collie. The same procedure was carried on as in the last case, save that a fluid culture of bacterium coli commune was introduced.

Within an hour of the operation a violent fit of vomiting caused one of the stitches to be torn out. This was followed by the escape of part of the omentum through the abdominal incision: at the same time the dog tore off the dressings.

When the animal was found in this state the omentum was lying on the floor, cold and dirty; it was replaced uncleaned in the peritoneal cavity, and some fresh formalin lotion poured in before the abdominal incision was closed.

The animal recovered from the operation without a symptom, and appeared to be perfectly normal.

NOTE.—In the above experiments no attempt at cleanliness was observed during the operation as I was desirous of freely introducing infective matter.

I am quite aware that the successful results in the above cases might by many be considered to be independent of the use of the antiseptic solution employed, and it might be suggested that check experiments should have been carried out. In such cases, however, check experiments may not be at all conclusive, owing to the difficulty of getting two dogs so alike as to make it possible to establish similarity of conditions. Moreover, it is well established that the introduction of infective material into the peritoneal cavity of the dog usually leads to serious or fatal peritonitis.

It might also be alleged that irrigation with sterilized water might have proved as satisfactory as the formalin solution in cleansing the cavity. This is undoubtedly possible. The point which I desire to establish, however, is that the solution of formalin, being a safe antiseptic, is calculated to be more efficacious than water.

In carrying out the above experiments I had in mind those cases in which infective material escapes during operations within the peritoneal cavity of the human subject. If, in addition to the ordinary means, viz.: sponging, irrigation, and drainage, flushing with a solution of formalin of suitable strength can be carried out, an additional chance of safety is given to the patient. Moreover, it must be a source of satisfaction to the operator to know that several ounces of this solution may be left in the peritoneal cavity without danger. (It will afterward be seen that I have carried out this procedure in the human subject.)

III.—Infection of the peritoneum, followed by irrigation with formalin solution after the lapse of various intervals.

1. Mongrel Dachshund. Peritoneal cavity opened. Bowel and omentum pinched and scraped in several places. A little blood allowed to enter the cavity.

Broth-culture of streptococcus introduced into the cavity; abdomen closed. The animal was languid after the operation, and on the following day, forty-eight hours after the operation, the incision was reopened.

Marked congestion of the bowel and omentum was found, the latter being somewhat crumpled and adherent to the parieties. Some turbid serum was present.

The omentum was spread out, its adhesions being separated. The peritoneal cavity was then irrigated with formalin solution (1 in 1000), a large quantity being left in the belly before closure of the incision.

After the second operation the dog remained quiet for two or three days, showing no marked symptoms of any kind beyond languor. In a short time it was running about apparently quite well.

2. Bedlington mongrel. Peritoneum opened, bowel and omentum pinched in several places, some blood allowed to enter the cavity. A broth-culture of streptococcus was introduced. The animal was rather languid after the operation, and on the following day vomited somewhat.

In forty-eight hours after the operation the abdominal wound was reopened. Peritonitis had begun and was especially well-marked in the region of the omentum, which was bound to the parieties and to the small intestine by fresh adhesions.

The latter were separated and the belly was washed out with formalin solution (1 in 1000), a large quantity being left inside, and the abdomen was closed. Four days afterward the dog died.

Autopsy: Some of the abdominal stitches had been torn out, so that a communication was established between the air and the peritoneal cavity. (The dog had gnawed the dressings away.)

Peritonitis was present, though not to a marked extent. Half an ounce of turbid serum was found among the omental adhesions.

Cultures made from the fluid showed the presence of staphylococci. The bacterium coli commune was not present.

NOTE.—The dog in this case was not in good condition before the operation, having recently suffered from distemper.

The tearing apart of the wound by the dog introduced an unfortunate complication, which interfered with the progress of the experiment.

3. Pug dog. Abdomen opened. Omentum and bowel pinched in several places. A broth-culture containing staphylococcus aureus and albus was introduced.

After twenty-four hours, during which time the dog was very languid, the wound was reopened.

Dark congestion of the parietal peritoneum, intestines and omentum was found in the lower part of the abdomen; recent adhesions were present, and a little flaky serum was found.

The adhesions were separated and the peritoneal cavity thoroughly irrigated with a formalin solution (1 in 1000), the belly being left as full as possible when the abdominal incision was closed.

For a few days the dog was languid, but did not vomit nor show any special symptoms. Very soon he was running about apparently quite well.

4. Spaniel. Peritoneal cavity opened. Bowel and omentum pinched and scraped in several places. Blood allowed to enter. Fluid cultures of staphyloeoccus albus and streptococcus were introduced. In twenty-four hours the belly was reopened. Peritonitis was in progress.

Recent adhesions were broken up, the cavity being thoroughly irrigated with formalin solution (1 in 2000), a large quantity being left in the belly before it was closed.

The dog was languid for a short time, but soon got well, no signs of illness being noted.

5. Terrier. Abdomen opened. Omentum and bowel pinched and scraped in several places, some blood being allowed to enter.

Fluid cultures of streptococcus and staphylococcus aureus were introduced. After forty-eight hours the belly was reopened. Marked peritonitis existed, recent adhesions being numerous.

A considerable quantity of flaky serum was present. The adhesions were separated and irrigation was carried out with formalin solution (1 in 500), the belly being left as full as possible when the incision was closed.

Besides languor, which lasted for a few days, no special symptoms were noted, and the dog soon moved about in a perfectly healthy manner.

In operating in the above cases for the purpose of introducing the infective material, no attempt was made at cleanliness in my technique, in order that the chance of infection might be greater.

The results obtained are undoubtedly of great interest. It is, of course, possible that in no instance was the infection severe enough to cause a fatal peritonitis, so that it might be urged that the opening of

the abdomen, after infection had been in progress, followed by the introduction of formalin solution, had not been the chief factor in preventing death.

On the other hand, such injuries as I inflicted on the omentum and bowel, when accompanied with the introduction of active cultures of pathogenic organisms, are usually attended with fatal results.

It is also remarkable that, in these experiments, the dogs recovered after the introduction of the formalin with such little disturbance. At any rate, the presence of the fluid in the peritoneal cavity must have exerted an important inhibitory influence on the infecting organisms.

These experiments are, it seems to me, strongly suggestive of the line of treatment to be adopted in the human subject in cases in which infective peritonitis is in progress.

A similar procedure to that which was carried out in the experiments would not, of course, be followed in the case of man; in the latter one would, in addition to the irrigation, establish two or more openings through which drainage might be kept up and successive irrigations carried out.

To treat a dog in this fashion is practically impossible, on account of the movements which the animal makes, and because of the difficulty of keeping the dressings in order.

It was because of this practical difficulty that I adopted the plan of irrigating after breaking up soft adhensions, and filling the abdomen as full as possible with the formalin solution.

My aim was to bring about the action of the solution on the infective agents before absorption took place from the peritoneal cavity. It was very evident from my experiments that no general toxic effect resulted from the addition of the formalin solution,

Cases in which I have used Formalin Solution in the Peritoneal Cavity of the Human Subject.

Having gone thus far with my experiments, I determined to try the effects of formalin in the peritoneal cavity of the human subject, and, as will be seen, I proceeded with great caution. My observations have been made in a number of cases of which the following may be mentioned:

Case I.—Abdominal section for bilateral pyosalpinx. After separation of many adhesions and removal of the diseased parts, the pelvis was thoroughly swabbed out with formalin solution (1 in 1000), and drainage kept up for twelve hours. The patient made a good recovery.

Case II.—Abdominal section for bilateral ovarian abscess and pyosalpinx. After removal of the diseased parts, many adhesions being

separated, 60 ounces of formalin solution (1 in 2000) were used for irrigating the pelvis, coming freely into contact with the intestines. The fluid was sponged out and drainage was carried out by means of a glass tube.

The tube was kept in position for twenty-four hours, being exhausted several times during that period. At each exhaustion some formalin solution (1 in 2000) was poured into the tube while it was moved up and down and turned around. In this way the track of the tube was made to come into contact with the antiseptic solution. The patient made a good recovery.

Case III.—Abdominal section for pyosalpinx. The same procedure was carried out as in the last case, except that the formalin solution was left longer in the abdomen before being sponged out. The patient recovered well.

Case IV.—Abdominal pan-hysterectomy for sarcoma of the uterus. After removal of the uterus the peritoneal cavity was thoroughly washed out with formalin solution (1 in 2500). The fluid was allowed to drain out slowly through the vagina, and the cavity then flushed out with normal saline solution.

During the after-treatment, the iodoform gauze which was placed in the vagina was changed from time to time, and during the first three days, at each change of dressing, I passed a double catheter into the pelvic cavity and irrigated it with formalin solution (1 in 2000). The patient made a good recovery.

Case V.—Abdominal section for double salpingo-ovaritis. Irrigation of the abdominal cavity was carried out with formalin solution (1 in 2500); some of the lotion was left inside when the abdomen was completely closed. The patient made a good recovery.

Case VI.—Right parametric abscess pointing above Poupart's ligament. The abscess was opened above Poupart's ligament and the cavity washed out with formalin solution (1 in 500).

During the irrigation the posterior wall of the abscess cavity burst, on account of its extreme thinness.

This was followed by the immediate descent of small intestine into the abscess cavity. This complication was not, however, found out until the irrigation had been continued for several minutes. The irrigation was then stopped and a glass drainage-tube inserted.

At each exhaustion of the tube during the first few days following operation, a little formalin solution (1 in 1000) was introduced so as to come into contact with the drainage track. My anxiety in this case was increased by the presence under the skin of a pocket into which the pus had burrowed: this was, of course, very carefully dressed

and no infection of the peritoneum took place. No ill effects resulted from the application of the strong formalin solution, and gradual closure of the incision took place, the patient making a good recovery.

In reference to these last cases (with the exception of Case VI.) I wish it to be clearly understood that I employed the formalin solutions, not at all because of the value of their antiseptic action, but solely for the purpose of determining their influence when introduced into the human peritoneal cavity in such strengths as to carry out the conditions which I have already detailed as pertaining to the ideal intra-abdominal antiseptic.

I began tentatively at first, merely sponging the peritoneum of the pelvis and its viscera, In case V. I carried out the same procedure which has been described by me in connection with many of my experiments on dogs, viz., irrigation of the peritoneal cavity followed by closure of the abdomen, a considerable quantity of the solution being left inside.

In no instance did the application of the formalin appear in the slightest degree to cause any unusual symptoms. The accident which I have described in connection with Case VI., viz., the escape of the intestines into the abscess cavity in the progress of its irrigation with strong formalin solution (1 in 500), was of extreme interest in demonstrating that the human peritoneum may, sometimes at least, stand the irrigation of such a strong formalin solution as well as the peritoneum of the dog.

The application, so entirely accidental in this instance, I would not counsel in any other case, because as I have already pointed out, the inhibitory influence of weaker solutions (1 in 1000, 1 in 2000, 1 in 3000, etc.) on microbial activity is sufficiently strong ; and the great desideratum in dealing with the peritoneal cavity is to obtain the greatest amount of benefit with the smallest amount of risk to the peritoneal endothelium.

In a certain number of my experiments on dogs, as well as in my operative procedures on the human subject, I employed normal saline solution instead of water in making up my formalin solutions. This I did in the expectation that they would be better borne by the peritoneum. In future work I intend to modify this procedure still farther, viz., first of all, irrigating the peritoneum thoroughly with saline solution, removing this by sponging, and afterward introducing the formalin solution.

The object of this variation is to prevent too rapid absorption of the formalin solution by the peritoneum, and thus to allow its activity to be longer manifested in relation to the infective material present.

That this previous irrigation with saline solution reduces the absorptive powers of the peritoneum, seems to have been fairly well established by Kinscherf's and Delpet's experiments:

KINSCHERF'S EXPERIMENTS.—1. The peritoneum was irrigated with a saline solution, and immediately afterward with a solution of corrosive sublimate (1 in 2000). No symptoms of mercuric poisoning followed.

2. Irrigation with corrosive-sublimate solution alone was followed by toxic symptoms.

DELPET'S EXPERIMENTS.—Irrigation with saline solution was kept up for ten to twenty minutes. Then more strychnine than would produce tetanus in a control animal was introduced without any symptoms following.

The following cases occurring in the surgical practice of two friends are worthy of note. Their employment of the formalin was at my recommendation.

CASE I.—(In care of Dr. Boone, Presque Isle, Maine.)—Male. Aged 56. Abdominal section was performed for appendicitis. A large periappendicular abscess was found in which the appendix lay as a mass of slough.

The cavity was washed out with formalin solution (about 1 in 500) and drainage was kept up with a glass tube for a few days. Each day it was thoroughly flushed out twice with the formalin (1 in 1000). On the sixth day the cavity had shrunk to a very small size, and there was scarcely any discharge.

In two weeks from the operation the patient was practically well.

CASE II. (In care of Dr. Boone, Presque Isle, Maine.)—Girl. Aged 11. Was first seen after fourteen days of severe illness, in a very low state. A large mass filled the lower part of the belly, and evidences of peritonitis were present.

Abdominal section was carried out, a mesial opening being first made, through which a large quantity of pus escaped. Another opening was also made in the right flank.

Irrigation was carried out with normal saline solution, and afterward with formalin solution (about 1 in 500), the fluid passing among the bowels from one incision to the other.

The inflamed intestines were also sponged, as much as possible, free of lymph.

A glass drainage-tube was then placed in each incision.

Each day after the operation the peritoneal cavity was flushed out with the formalin solution.

Rapid recovery took place, closure of the incision occurring very satisfactorily.

NOTE.—In both of these cases some pain was complained of when the formalin solution was introduced. This was probably due to the strength of the solution employed. The latter was not necessary: a weaker solution might in all probability have been used as effectually and with less disturbance.

CASE III. (In care of Dr. W. F. Hamilton, Montreal.)—Male. Aged 48. A localized peri-appendicular abscess had been opened and the cavity drained. The appendix was found to be a mass of gangrenous tissue, and it was surrounded with large sloughs. On the day following, septic peritonitis was marked, the temperature being elevated and pulse rapid. On the next day there was abdominal distension, vomiting and hiccough.

Dr. Hamilton, who was called in consultation, determined to open the peritoneal cavity freely. The incision made at the operation was reopened and a fresh opening made in the right loin. Thorough irrigation of the belly was made with formalin solution (1 in 500), and, afterward, with a weaker solution. Free drainage was kept up with tubes and every day irrigation of the cavity was carried out with formalin solution (1 in 1000).

On the fourth day the abdominal distension was less and flatus was passed. On the fifth day sloughs came away freely from the original seat of trouble. By the sixth day the temperature had fallen to 99⅗° F. and continued low afterward. The patient made a good recovery.

These cases are of great value in demonstrating the safety of formalin solution in the peritoneal cavity. In the two first described, a very strong lotion was employed by my friend, the surgeon in charge, because of the extreme severity of the disease, both where the infective process was mainly localized and where it was generalized.

There seems little doubt that where inflammatory changes are in progress in the peritoneum stronger solutions may be used with safety than where the peritoneum is scarcely or not at all altered.

But, besides illustrating the harmlessness of formalin, these cases demonstrate its power in checking microbial activity in different varieties of infection, viz.: localized sloughing and suppuration, gangrene and diffuse suppurative peritonitis.

The rapidity with which local conditions improved was very remarkable in each instance, and they can only be attributed to the sudden checking of the infective process.

An important feature in the treatment was undoubtedly the making

of two incisions, whereby free drainage was allowed, as well as free thorough irrigation with the formalin solution.

This is a most important procedure, especially in the cases where diffuse suppurative peritonitis exists. If two openings are not sufficient, there should be no hesitation in making a third.

ADDENDUM 1.—Clark, in his recent paper dealing with drainage in abdominal operations, has emphasized the various risks attendant upon the use of gauze and tube-drains. One of these risks I wish to notice, viz.: infection occurring in the drain-track in cases where it was not present at the time of the operation. Though in most cases this infection leads merely to local trouble, it may be a troublesome complication, and several operators have drawn attention to it.

As a means of preventing its occurrence, I wish to recommend the use of formalin solution (1 in 1000 or 1 in 2000). I have already described how this may be employed when drainage is carried out with a tube.

If gauze be the drain-material, the solution could easily be made to saturate it from time to time.

ADDENDUM 2.—Experiments to determine the effects of chinosol in the peritoneal cavity.

Not long ago chinosol, one of the quinoline compounds, was introduced as a non-toxic, non-corrosive, non-irritating, powerful antiseptic agent.

According to the reports of various experimentors who studied its effects on micro-organisms, its inhibitory influence is manifested even in weak solutions in a marked degree.

Wyatt Johnson, in a report to the Board of Health of the Province of Quebec, Canada, states that chinosol is practically non-toxic, even when used concentrated, and that its power of checking or inhibiting the growths of microbes is very high even in very weak solutions. He points out, however, that it requires very strong solutions to *destroy* the germs. He states that it offers "decided advantages for therapeutic surgical purposes."

I have recently begun a series of experiments on animals on the lines described in connection with formalin.

I.—Influence of chinosol when placed in the peritoneal cavity.

1. Mongrel fox-terrier. Abdomen opened and irrigated with chinosol solution (1 in 500). On closing the incision the belly was left as full as possible. Inside an hour the animal was running about. No ill effects followed.

2. The same experiment repeated, with same results.

3. The same experiment repeated, with same results, a formalin solution of weaker strength being used.

II.—Introduction of infective material into peritoneal cavity, followed by immediate irrigation with chinosol solution:

Terrier. Abdomen opened. Bowel and omentum pinched and scraped in several places, and a fluid culture of staphylococcus aureus introduced. Irrigation was then carried out with chinosol solution (1 in 500), several ounces being left in the belly when closure took place.

Recovery occurred without any abnormal symptoms.

III.—Introduction of infective material followed by irrigation with chinosol solution after the lapse of a period of time:

1. Collie. Abdomen opened. Bowel and omentum pinched and scraped in several places. Fluid cultures of bacterium coli commune and staphylococcus aureus were introduced. Within twelve hours the dog became very languid and lay down most of the time.

Forty-eight hours after the operation the belly was reopened. Acute peritonitis was present, there being considerable bloody fluid in the cavity. Numerous adhesions had formed. Those were broken down and irrigation carried out with chinosol solution (1 in 1000), several ounces being left in the belly when it was closed.

The dog remained languid for a couple of days, but made a perfect recovery.

2, Terrier. Abdomen opened. Bowel and omentum injured. Blood allowed to enter cavity. Fluid cultures of bacterium coli commune and of micrococcus flavus were introduced.

Within twelve hours the dog was sick and languid, breathing irregularly, and having diarrhœa.

Twenty-four hours after the infection the belly was reopened. Early peritonitis was present, adhesions having begun to form.

Irrigation was carried out with chinosol solution (1 in 1000), several ounces being left inside when the belly was closed.

3. Terrier bitch. Abdomen opened. A hole was made in the ileum close to the colon, and the bowel contents (fluid matter) squeezed from half a foot of bowel into the peritoneal cavity

At the same time a fluid culture of bacterium coli commune was placed there. The opening in the ileum was carefully closed.

Some hours after the operation the dog became languid and had shivering attacks.

Twenty-four hours after the operation the abdomen was opened. Early peritonitis was in progress, some serous fluid being present.

Thorough irrigation was carried out with chinosol solution (1 in 1000), as much as possible being inside when the belly was closed.

The dog was very quiet and indisposed for several days, but recovered perfectly.

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Case Reports.

EXCISION OF HALF OF THE TONGUE.

BY

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J. L., æt. 63, entered the Montreal General Hospital on Sept. 15th, complaining of a painful lump on right side of tongue and difficulty in swallowing.

About two years ago the patient noticed a roughening on the right side of the tongue, about 1½ inches from tip, which caused no pain but did not disappear. Four months ago a little lump appeared on the right side of his tongue which pained him greatly and inconvenienced him in swallowing.

For the last two months patient has not taken any solid food and during the last four months has lost flesh. Examination of the tongue showed, on the right side of the border of the tongue, a small hard indurated mass, about the size of a small bean, which appeared to involve the lingual nerve. Hot and cold liquids caused the patient pain.

An operation was advised for removal of half the tongue by Butlin's modification of Kocher's method.

Patient was prepared for operation on Sept. 21st. Ether having been given, a preliminary tracheotomy was performed and a well-fitting canula introduced. The pharynx was then packed. An incision was then made from the mastoid process to the hyoid bone and thence along the anterior belly of the digastric muscle to the jaw, slightly to the right of the median raphe. The platysma was divided and the lingual artery ligatured as it passed under the hyoglossus muscle. The facial artery was tied, the submaxillary and lymphatic glands were then extirpated, all the lympathic glands carefully dissected from the anterior triangle of the neck, the mylohyoid muscle divided and the sublingual glands removed. The mucous membrane along the jaw, and the mylohyoid muscle was then divided. The tongue was split down the middle line, the right side drawn well out of the wound and excised well behind the disease. All oozing being stopped, the wound was closed, the tracheotomy tube left in and the

pharynx freshly plugged. For three days the patient was fed by the rectum and after that by a tube through the mouth. On the eighth day the tube was removed, and on Oct. 25th, the patient was discharged, cured, being the thirty-first day after operation. The pathological report was carcinoma of the tongue.

This patient presented himself for inspection on the 1st December. The remaining half of the tongue lay in the middle of the floor of the mouth and was straight, not curled up; it was moist, and materially useful in mastication and speaking.

ALCOHOLISM AND RESPONSIBILITY.[1]

BY

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I desire to submit to the society the case of a man brought before the Court of Queen's Bench for trial on an accusation of having illegally attempted to commit suicide. The action was brought in virtue of article 338 of the Criminal Code of 1892, which reads as follows: "Any one attempting to commit suicide, is guilty of an "illegal act and liable to two years imprisonment."

The attempt or rather attempts at suicide of which L. T., is accused were made in a police station cell, and the circumstances under which they took place were told by the police officers at the preliminary inquiry held by the Police Magistrate. L. T., had in succession tried to cut the radial artery of the left wrist, to hang himself, and to strangle himself. When he was locked up at the police station, the accused who had been drinking heavily for two or three days, was in a very advanced state of intoxication, and had a very wild appearance.

The fact and the seriousness of the attempts at suicide are indisputable, they were corroborated by the testimony of credible witnesses, and the prisoner himself still bears the marks. "T" himself, however, declares that he never had the intention of committing suicide, that he recollects nothing, and receives with some hesitation the story of the police officers.

At the time of examination L. T. did not show any intellectual trouble, and his state of mental health during the whole time under observation could not furnish any ground for doubt. His clearness of mind was perfect, his memory sure and reliable, and he perfectly understood his position, stating voluntarily that he profoundly regretted the abuse of drink to which he gave way, and certainly realized the consequences. He did not rave on any subject (delusions) and did not experience any sensory troubles (hallucinations.) Moreover, his sanity was never suspected, except on the occasions when he gave himself up to alcoholic abuses. His neighbours say, that relatively, a very small quantity only was enough to make him drunk, and

[1] Read before the Medico-Pyschological Society of Quebec, October 15th, 1898.

that when in that state he acted like a fool, and that once, after he had made an attempt at suicide in a drunken spree, he was sent to an asylum in the United States and confined there. L. T. himself says that when sober, he never has had the idea or desire to commit suicide, and that at all events he never made an attempt to kill himself except when in liquor.

L. T. is 26 years of age, and has been married for six years. His father is a respectable citizen and a total abstainer, of irreproachable conduct and ordinary intelligence, and has never shown any intellectual trouble. The fact that he has held the same situation for thirty years is ample proof of this. His paternal grandfather was an inebriate given to frequent and prolonged sprees, a paternal uncle also was an inebriate, going on sprees, and often had delirious attacks following his abuses of alcoholic stimulants. His father's married sister died at St. Jean de Dieu Asylum within two weeks from an attack of acute mania, consequent on the fatigue and grief occasioned by the sickness and death of one of her nieces. She had had frequent severe and prolonged attacks of mania, resulting from the most trivial causes both before and after her marriage.

While the prisoner is of small stature, the development of his head is considerable, the measure of his hat being No. 7. A lump on his left temple, a slight deflection of the nose, and a default in one of the points of his chin, give him an appearance of want of symmetry which is quite noticeable.

The information which I have obtained concerning his mode of life is not very full, and should be cautiously considered. It has been furnished by one of his class-mates, whose recollections are rather dim, by his father who fears him and trembles lest his son should take his life and who would like nothing better than to see him confined, by his wife, who seems to be indulgently inclined, and by the prisoner himself, who desires nothing so much as his freedom and seeks, with that end in view, to belittle the effect of his errors. In spite of all their exaggerations or reticence, the character and conduct of L. T. is distinctly brought out.

At college he was considered a bright student, notwithstanding a propensity for laziness, and stood well in his class because it required little effort on his part to learn, but he was shunned on account of his sullen temper, and was generally looked upon as a badly balanced man. Later, after leaving college, he always fulfilled intelligently, when sober, the duties confided to him. His last employers testify, that when sober, L. T. gives them entire satisfaction, that he is an excellent employee, polite, of good manners, laborious and intelligent.

The fact of their having kept him in their service in spite of his misdeeds, and of having taken him back after his conviction, is sufficient evidence of the good opinion his employers have of his intelligence, work and capability.

His habits of intemperance have become boisterously manifest since his marriage. Previous to this nothing was noticeable, but his father is of the opinion that he drank secretly outside with his friends, and that he in this manner, contracted the habit for drink. However, since his marriage, he has frequently got drunk, never letting more than a month or two pass without going on sprees lasting several days, except when confined in the asylum or prison. The disorderly manifestations of his drunkenness had often led to his arrest, and his repeated attempts at suicide were the cause of his being cited several times before the courts.

L. T's. drunkenness almost always shows the self-same character. He gets drunk very easily, and alcoholic stimulants act on him with great effect, after a few glasses, he completely loses control of himself. He then drinks until he becomes mad, and if he is thwarted he becomes violent. On one occasion he knocked his wife down and seized her by the throat to force her to give him money for more drink. When he is drunk he is wicked, aggressive, and strikes, brandishes arms, and breaks the furniture. He has threatened his father, and the latter has several times had great trouble in subduing him. After a short while, sometimes within 24 hours, the alcoholic delirium makes its appearance, manifesting itself by nightmare, nocturnal fears, and specific hallucinations. He sees his dead relations, fantastic animals, bugs as big as elephants, who open enormous fans, he sees rats creeping over his body, etc., etc. On several occasions he has had violent epileptic fits, accompanied with falls to the ground, tonic and clonic convulsions, deep snoring, intense twitchings of the face and frothing at the mouth. As soon as he is deprived of liquor, delirium promptly leaves him, he rapidly regains his senses, and the intellectual troubles do not further bother him. It was after a series of similar sprees and mostly always in the police cells where he was confined as drunk and disorderly, that he was guilty of his attempts at suicide, which can be counted at least by tens.

It was impossible for me to procure exact information on the subject, for the prisoner does not remember, or pretends not to remember, the acts he commits when in an advanced state of drunkenness; all that he pretends to know is what they tell him. In New York, where he lived for the first few years after his marriage, the delirium always following his drunken sprees and the convulsive attacks to

which he was subject were often the cause of his being taken for a fool or an epileptic by people who were not acquainted with his antecedents, and several times he was brought to Bellevue Hospital to be examined, in view of his commitment to an asylum. However, as these morbid appearances, notwithstanding their intensity, quickly disappeared with the privation of alcoholic stimulants, he was not committed. Once, however, following an attempt at suicide by drowning, December 24th, 1894, he was brought to the hospital, suffering from a convulsive attack, and as he had delirium, the doctors, who did not know him, believed him to be suffering from delirious epilepsy, and made out a certificate of mental aberration. The following day he was transferred to the asylum and remained there until March 30th, 1895. The day after his arrival, he was perfectly sane, spoke reasonably, and was in a state to give the doctors all particulars. He recalled having been drinking and causing disturbance in a street car, but he had no recollection of his attempt to commit suicide, or of his having been in the hospital, where he must have shown some mental trouble for the examining doctors testify that he replied to the questions after the manner of an epileptic. All the time of his stay at the asylum he had no convulsive attacks and never showed the least mental trouble. As we have previously seen, outside his drunken excesses, L. T. had never shown any mental trouble and was considered a very intelligent man, and had even given proof of remarkable business qualities. It then clearly follows from the study of the phenomena presented by L. T. on the night of July 24th, 1897, in connection with those of similar previous fits, that he made the attempt at suicide during a fit of alcoholic delirium sufficiently pronounced to make it possible to declare that he had lost all consciousness, and that he was not capable of appreciating the nature and the seriousness of his act and of realizing that the act was wrong, and that he was incapable of controlling his will.

L. T., can then on this point, be declared irresponsible and his behaviour is manifestly due to an abnormal or pathological inebriety. But it appears to me that here we can ask the important question, namely: Is the prisoner capable, and in what measure of preventing himself from drinking? L. T. is intelligent enough to realize the consequences of alcoholic abuses, he does not drink in pursuance of a delusional idea or of an hallucination. It remains only to be seen, if L. T. is fatally and irresistibly driven to drink by an impulse, that is to say, if he is suffering from dipsomania, or else if his will power is strong enough to overcome his appetite for alcoholic liquors.

As we have previously seen, the patient became by degrees accus-

tomed to drink with friends without the knowledge of his father. By degrees his drunken sprees became more frequent and of longer duration, so that now he often gets drunk. He in this manner contracted the taste for alcoholic liquors from habit, so that he is in a state of habitual appetite, of which he has knowledge, since he takes certain precautions to shun this evil. For example, he sends his wife to collect his wages in order not to have any money about him, nevertheless, when the occasion arises of accepting a glass from a friend or of offering one in celebration of a sale, or to close a bargain, he does not shun it. He says to himself, that there is no harm in taking a glass, and that he will stop there. Unfortunately, this first glass calls for a number of others, intending each one to be the last. He always thinks that he will be able to stop in time. There is a vast difference between these alcoholic excesses, and the fits of dipsomaniacs who are irresistibly forced to drink by an uncontrollable impulse arising outside of any occasion, and preceded and accompanied by characteristic symptoms making a well defined morbid entity, in fact, a disease for which the individual can in no way be held responsible, any more than a typhoid patient for his typhoid fever, or a consumptive for his tuberculosis.

We can then affirm that L. T. is not driven to drink by an irresistible impulse and that consequently he is free to drink or not; but to what degree? Such is the question that we must now answer.

Drunkenness often shows pathological marks that are sufficient by themselves to point out traces of a morbid predisposition, that predisposes the person to easily get drunk. His physical resistance, in the presence of alcohol, is often so weak that drunkenness overcomes him after taking a quantity which would have no effect on a well balanced man (Legrain). And more than that, this drunkenness rapidly renders the form anormal and complicated. (Vetault). Such is absolutely the case of L. T. He shows an anormal susceptibility to the poisonous action of alcohol, indicating a defective mental organization, which must naturally be attributed to a predisposition inherited from his grandfather and which is also affirmed by the delirious alcoholism of his uncle and by the insanity of his aunt, being brought on by trivial causes insufficient of themselves to affect a mind not already disposed thereto.

Legrain says in his study on the heredity of alcoholism; "Another "principal point that we have established is the fatal hereditary "transmission of the appetite for strong drink in a great number of "cases." In this same treatise, he adds: "that one of the main signs "of mental degeneration is the great facility with which these people "let themselves be influenced, and that they are very often of weak

" will power." It is the justifiable to admit, taking into consideration the circumstances of the prisoner's mental state, that his voluntary action may be lessened by a predisposition that he has inherited.

Conclusions:—The following conclusions naturally present themselves to my mind. L. T. should not be considered as a lunatic as no mental weakness or any signs whatever of delirium could be found in him. At the time of the incriminating offence, his mental faculties had undergone a complete obscuration on account of the profound drunkenness in which he was plunged.

As the fact of the drunkenness is not the direct result of disease properly speaking, it does not belong to me to judge of the penal responsibility of the accused, the judgment of which belongs to the courts. However, on account of the morbid heredity, which makes him a " predisposé," there can be admitted in his favour a palliation of the penal responsibility. L. T. could advantageously be confined in an inebriates home such as they have in other countries for patients of this kind.

For discussion of this report see page 961.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Traumatic Nervous Affections.

THEODORE DILLER, M.D. "Traumatic nervous affections."—*The American Journal of the Medical Sciences*, Sept. 1898.

In this article Dr. Diller reports ten cases which he divides into litigation and non-litigation cases. Eight belonged to the former group, seven of whom were injured by the explosion of natural gas.

The conclusions of his studies are as follows:

1. Nervous symptoms complained of as following severe accident, while often exaggerated are frequently very real.

2. Simulation is rare and easily detected by the skilled neurologist.

3. To successfully simulate nervous symptoms is a difficult task, possible to only a few.

4. The symptoms in any case may be subjective, wholly or chiefly.

5. The nervous symptoms are as a rule neurasthenic or hysterical, or both.

6. A certain number of cases suffer from symptoms not attributable to either of the above conditions.

7. An actual degeneration of the nerve substance is sometimes set up, and may progress.

8. While there is a strong tendency to recovery in many of these cases, the prognosis in not a few cases is grave, and in still others quite hopeless.

9. While the physical element in most of these cases is powerful, there are others in which it plays a very minor role.

10. Any name used to describe these nervous affections, carrying the idea that they constitute a morbid entity is undesirable.

11. Some name, *e. g.*, "traumatic neuroses" if used to mean any nervous affection following a traumatism would be desirable.

Danger of Error in Diagnosis.

JANEWAY, E. D. "Danger of error in diagnosis between chronic syphilitic fever and tuberculosis."—*The American Journal of the Medical Sciences*, Sept. 1898.

A series of seven cases illustrating this subject is presented in this paper read before the last session of the Society of American Physicians.

The symptom group consisted of loss of weight, continued fever, weakness, night sweating, sometimes cough, and pain in the right side. In five cases the patients had been sent to health resorts, their physisians regarding them subjects of tuberculosis although physical signs were not confirmatory. No improvement followed the climatic and other antitubercular treatment. A history of syphilitic infection was obtained in the majority of the cases and the administration of remedies thus indicated was followed by most salutary results.

Dr. Janeway points out very clearly how ignorance of the fact that syphilis in the so-called tertiary period may occasion a fever of long duration, malaise, emaciation and perspiration, leads one into this error of diagnosis. Tuberculosis, malaria and sepsis usually explain many obscure phenomena, which, by the light of this article, may be referred hereafter to syphilis.

The Pathology of Diphtherial Paralysis.

BATTEN, FREDERICK E., M.D. "The pathology of diphtherial paralysis."—*The British Medical Journal*, Nov. 19th, 1898.

Batten examined the nervous systems of the bodies of six patients who died, the subjects of diphtheria, five of whom showed diphtherial paralysis. They were all children under six years. The longest case was 100 days, the shortest 43 days in duration.

Of the six examinations of the nervous system only four gave a positive result showing a parenchymatous degeneration of the nerves. The negative finding in one of the cases was most anomalous, since clinically the signs were well marked and the patient had been hemiplegic for 21 days.

In three cases the spinal cord showed degeneration in the grey matter.

The phrenic nerve was affected in four cases, the vagi in two; while other peripheral nerves were affected in all four cases.

A parenchymatous nerve degeneration seems established in the examination of these cases. It is probably primarily peripheral. The cells of the anterior horns, according to Mouravjeff, are first involved

and in the later weeks of the infection the nerve changes occur. During this time it is possible for recovery of the parts first involved to take place, or those parts may become atrophied.

In conclusion upon the work of other observers and upon his own, Batten says it is probable that the dominant lesion in diphtherial paralysis is a parenchymatous degeneration of the myelin sheath of the nerves and that this degeneration affects both motor and sensory fibres alike.

W. F. Hamilton.

Ophthalmology.

UNDER THE CHARGE OF J. W. STIRLING.

Ocular Symptoms in Constitutional Disease.

DREISCH. "Oculomotor disturbances following measles."—*Münch. Med. Wochenschrift*, May, 1898.

CORTE. "Pupillary reflex in infectious diseases."—*Klin. Therap. Wochenschrift*, May, 1898.

YARR, "Malarial affections of the eye."—*British Medical Journal*, Sept. 2, 1898.

HINSDALE. "Eye symptoms of acromegaly."—Boylston Prize Essay, Harvard University, 1898.

HELBORN. "Bilateral chancre of the eyelids."—*Münch. Med. Wochenschrift*, May, 1898.

LUEBBERS. "Ocular changes in disseminated sclerosis."—*Archiv. für Psychiat. und Nervenkr.*, XXIX., 3.

Dreisch, in his article, reports three cases of oculomotor paralysis, all in children. In two of them there was only paralysis of accommodation coming on, in one case eleven days, and in the other three weeks after recovery from measles. The power of accommodation, however, soon returned. In the third case, there was vomiting and chills at the onset accompanied by diplopia, due to incomplete paralysis of all the extra-ocular branches of the third nerve. Recovery resulted in three weeks. Dreisch offers no explanation of the immediate cause, except that he does not think it is a toxin circulating in the blood, since similar post diphtheritic paralyses are not prevented by the injections of serum. He inclines to the lesion being in the peripheral nerves, as it is sometimes, so sharply limited to one branch.

Corte states that the pupillary reflex is normal in measles, scarlet fever and smallpox, except the hæmorrhagic form of smallpox, where it is weaker or absent.

In typhoid, with lung complication, it is sluggish, and in infectious endocarditis it is absent. In puerperal fever with endocarditis or peritonitis the reflex is absent.

Yarr's paper on malarial affections of the eye is well worth studying, especially on account of the curiously slip shod way with which the

subject is treated in text-books on ophthalmology. The malarial troubles all originate in circulatory disturbances, and Yarr classifies them thus: 1. Neuritis. 2. Retinal hæmorrhages. 3. Retino-choroiditis. 4. Effusions into the vitreous.

As an example of the neuritis he cites a typical case, the characteristics being as follows: 1. Repeated attacks of malarial fever. 2. Almost constantly supra-orbital pain and photophobia at onset, and frequently night blindness. 3. Colour perception unimpaired except in cases going on to complete optic atrophy. 4. Marked variation in the visual acuity from time to time, failing and improving, are characteristic of the malarial optic neuritis, a visual acuity of $\frac{1}{10}$ cm. rise in two or three weeks to $\frac{1}{2}$ or $\frac{1}{3}$, falling again perhaps in two or three days. 5. The visual fields are intact or only slightly contracted. 6. The swollen disc assumes a peculiar greyish red colour and is due to parasites in its capillaries, this being pathognomonic, In many cases there are minute peripheral hæmorrhages. 7. Eighty per cent. end in partial atrophy of the optic nerve, some end in complete recovery and but very few in complete atrophy.

The retinal and optic nerve changes are due to melanæmia with increased vascularization, and the subsequent atrophy is due to consecutive endarteritis. The lesions are invariably binocular.

Retinal Hæmorrhages are either minute peripheral ones or large peripapillary and macular. The first variety may be overlooked. The transient disturbances of vision in malaria are often likely due to slight œdema of the retina, followed by these minute hæmorrhages. The large peripapillary and macula hæmorrhages are rare, occurring with optic neuritis and in malarial cachectics. The prognosis is grave, as they may absolutely abolish vision. They are due to impacts of parasites followed by extravasations.

Retino-choroiditis.—In twenty per cent. of acute intermittent cases, at the end of the hot stage, supra-orbital pain, tenderness of eyeball, photopsia and photophobia develope. There is a diffuse œdema of the retina, this is later followed by capillary atrophy of the choroid and atrophy of the retina and disc, the fundus appearing grey as though powdered with pepper—all being due to chronic inflammation of the choroidal and retinal vessels set up by the irritation of the plasmodia.

Effusions into the Vitreous.—The rare form of white infiltrations —due to serous exudations—arises from time to time and recovery may occur.

Sudden persistent amaurosis without any fundal change is likely due to some obscure focal lesion. Sudden amaurosis ending in optic

atrophy is likely due to hæmorrhage in the sheath of the nerve : but sometimes to quinine amaurosis.

Periodic blue vision has been reported,

Hinsdale mentions the following symptoms as met with in acromegaly. The bones and orbital ridges are heavy, the cartilages and skin of the lids thicken, and exophthalmos developes, due likely to proliferation of the adipose tissue of the bulb. The lids are pigmented, often being bronzed, and the secretion of tears increased. Movements of the eyes are slow, and there is sometimes failure in the synchronous elevation of the lids. Nystagmus and internal and external strabismus have been observed. Complete oculomotor paralysis and partial paralysis of sixth nerve is present. There is diminished reaction of the pupils to light. Vision is often practically or completely lost, the latter with neuroretinitis and optic atrophy. The fields vary in size and shape, due to hypertrophy of the bone in the region of the chiasma or optic foramen pressing on the chiasma or nerve. The visual disturbances are, as a rule, an early symptom and are slowly but surely progressive.

Helborn's case is interesting on account of its rarity, there being only seven authentic cases recorded. The disease was transmitted from an individual with mucous patches in the mouth.

Luebber reports on eleven cases of disseminated sclerosis. One which came to section, showed complete optic atrophy with increase of interstitial tissue, and in part grey degeneration of optic nerve centre. In the other cases there was more complete optic atrophy. In three cases the field was normal, in seven there were simple scotomata, in two cases peripheral contraction of the field, and in six cases mystagmus.

Heat and Cold in Eye Disease.

HERRNHEISER. *Die Artzlicke Praxis*, XI., 1898.

Herrnheiser advises cold applications in acute catarrhal conjunctivitis, inflammatory stage of trachoma, blennorrhœa and in pain, after operations on the conjunctiva and in episcleritis.

Cold or warmth are equally indicated in interstitial keratitis, acute iritis and iridocyclitis, and hot applications in exudative iritis, in the pain of glaucoma, in panophthalmitis, and in trigeminal neuralgia.

Recurrent Erosion of the Cornea.

HIRSCH. *Wochenschrift f. Therap. u. Hyg.*, August, 1898.

GRADLE. "Traumatic recurrent keratitis."—*Annals of Ophthalmology*, October, 1898.

These interesting cases are caused by some slight injury of the

cornea, such as a scratch with a finger nail, a straw or a twig. The wound heals, then after a varying interval pain sets in and a small blister developes on the site of the injury. This blister breaks down and the spot heals in a few days, only to recur again. Hirsch considers the recurrence is due to neuralgia of the corneal twigs of the trigeminal, especially as an aura of pressing or burning sensations in the eye preceded it.

Gradle's paper is a *resumé* of our knowledge, or rather lack of knowledge, about this disease, with several very good case reports. The treatments advised varied—a bandage, cocain, calomel dusting, atropine, excision of the scar, cauterization of the scar, antipyrin internally, tonics, quinine—all giving a varying success.

Ocular Symptoms in Inflammation of the Sinuses.

De Lapersonne. *Archives d'Ophthalmologie*, June, 1898.

De Lapersonne points out, in inflammation of the frontal sinus, the possibility of intermitting pains simulating facial neuralgia and acting very markedly upon the ciliary nerves. In subacute accidents there is the formation of abscesses in the orbit with separation of the sequestra, but which heal easily, whereas in the chronic cases with old ectasia of the sinus, it is hardly possible to avoid having a permanent fistula. In cases where the maxillary sinus is affected, the peculiarity is the frequency of the extension or action on other cavities of the face, particularly the sphenoidal sinus and ethmoid cells.

J. W. Stirling

Pathology.

UNDER THE CHARGE OF J. G. ADAMI.

Acute Poisoning with Different Alcohols.

BAER, G. "Acute poisoning with different alcohols."—*Archiv. für Physiologie*, 1898, IV., p. 283.

Many observers have examined the toxicity of alcohols of the methyl alcohol series, and have given varied opinions as to the poisonous qualities of these substances. The object of this author was to decide between the conflicting results previously obtained.

Two stages are present in acute alcoholism: 1st. A short excitation followed, according to the amount of the agent used, by a longer period of depression.

Schmiedeberg eliminates the first stage altogether, and views it merely as a symptom of beginning cerebral paralysis. According to Prof. Rabuteau and others, the toxicity of different alcohols increases with increase in their molecular weight and consequently with increasing boiling point. Richardson showed that the stages of intoxication by the higher alcohols were the same, except that the period of excitation was shortened.

The author examined the toxicity of a mixture of alcohols. This was of interest, because on the one hand Huss and Dahlström affirmed that the presence of small quantities of fusel oil in brandy were only of secondary importance, while Dujardin-Beaumetz, Audigé and others, showed that impure alcohol had incomparably greater toxic qualities than had pure spirit.

Rabbits were used for the experiments and the different alcohols were introduced into the stomach by means of an œsophageal tube.

The experiments were divided into three groups according to the severity of the intoxication.

The following table gives some results expressed in grams per kilo body weight.

	LIGHT.	MODERATE.	SEVERE.
Methyl alcohol	3.2 —5.2	5.6 6.9	7.2 —9.02
Ethyl alcohol	2.5 —4.1	4.45—6.15	6.25—7.44
Propyl alcohol	1.6 —2.4	2.58 2.96	3.0 —3.46
Butyl alcohol	1.0 1.5	1.05—2.00	2.1 —2.44
Amyl alcohol	0.83—1.08	1.25—1.66	1.F —1.95

The last mentioned number in the severe form is the lethal dose.

In the case of a mixture of ethyl alcohol with 4 per cent. amyl alcohol, the lethal dose was diminished from 7. 44 g., to 4.66 g.; with 2 per cent. to 5.85 g.; with 1 per cent. to 6.82 g. He concludes that the amounts of fusel oil found in distilled liquors (0.3 per cent.—0.5 per cent.) are not sufficient to produce toxic symptoms by themselves, but may in certain cases augment the action of the ethyl alcohols. For fusel is much more toxic than amyl alcohol, but its poisonous action has been greatly over-estimated. A full bibliography is given.

C. G. L. Wolf.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

The Canadian Practitioner.

October, 1898.

1. The After Effects of Surgical Procedure on the Generative Organs of Females for the Relief of Insanity. JAMES RUSSELL.
2. Supra-pubic Prostatectomy. A. MACKINNON.

November, 1898.

3. Some Notes on Rosacea. GRAHAM CHAMBERS.
4. When Should We Operate (?) WM. OLDRIGHT.
5. Toronto Pathological Society. The President's Address. A. PRIMROSE.

1. RUSSELL protests against the wholesale mutilation of lunatics and raises his voice against the claims made for gynæcological surgery as a remedy for insanity. He had obtained the opinions of the leading alienists in regard to the relation of gynæcology to psychiatry and they held that in not more than two per cent. could disease of the uterus or its appendages be considered a factor in the cause of insanity. In some cases there was temporary arrest of insanity, but this was followed in nearly every instance by a recurrence of the nervous phenomena. The opinion was almost unanimous that more was due to the special nursing, rest, etc., than to the operation.

2. MACKINNON is strongly in favor of suprapubic prostatectomy as the method for general adoption in dealing with hypertrophy of the prostate. He looks upon it as a safe operation if performed with fair skill, and it is much more likely to cure the patient than any other of the suggested methods. He cannot imagine any case that should be treated by castration. He relates the history of five cases, four of whom might be called cured and one was benefitted by the operation.

3. CHAMBERS says that in the treatment of rosacea, the causative agent should be first made out and corrected. Of drugs, strychnine and ergot are of the greatest value. Resorcin and ichthyol may be

used internally if there is fermentation of food. Externally, sulphur and resorcin are his favourite application. Electrolysis and surgical procedure may be required.

4. OLDRIGHT relates the histories of several cases in which early operation had been performed. In some it was a matter of urgency, in others a matter of expediency.

The Canadian Journal of Medicine and Surgery.

October, 1898.

1. A Medical Itinerary: Being an Account of a Sail through the Sacred Islands. EZRA HURLBURT STAFFORD.
2. A Case of Abnormally High Temperature Subsequent to Attack of Tertian Ague. S. GRAINGER.
3. The Treatment of Goitre. CHARLES R. DICKSON.
4. Report of a Case of Strangulated Umbilical Hernia. W. J. GIBSON.
5. An Interesting Case of Defective Speech. W. A. YOUNG.
6. New Forceps for Intestinal Anastomosis. ERNEST LAPLACE.
7. The Treatment of Inebriates. A. M. ROSEBRUGH.

November, 1898.

8. Sporadic Cretinism in Ontario. ALEXANDER MACPHEDRAN.
9. Empyema, Operation, Recovery. B. R. HOPKINS.
10. Pulmonary Tuberculosis. JOHN HUNTER.
11. The Prevention of Tuberculosis. W. J. WILSON.
12. The Physiology of Nervous Disorders Peculiar to the Sex. J. J. MORRISSEY.

3. DICKSON is a strong advocate for the treatment of goitre by electrolysis. Surgical removal he considers should be restricted to the malignant forms or those fibrous forms not amendable to other treatment. Injections of iodine or other irritating fluids is an unwise procedure.

4. GIBSON reports a case of umbilical hernia that had been strangulated for forty hours; upon opening the sac, six inches of transverse colon was found in the centre of the mass, but was not gangrenous. A mass of omentum, firmly adherent to the margin of the opening was ligated and removed. The patient made a good recovery.

6. LAPLACE describes forceps for performing anastomosis of the intestines rapidly and with accuracy of suturing, without leaving any foreign substance within the gut. The forceps are of five sizes and are easily adjusted to the openings.

8. MACPHEDRAN says that while cretinism is not prevalent in Ontario, a sufficient number of cases occur to merit the careful atten-

tion of the profession. In a collective investigation extending over less than two months he had secured the reports of seventeen cases, but others were known to exist, of which reports had not yet been obtained. Details of the cases are given.

The Canadian Medical Review

October, 1898.

1. Toronto Clinical Society—President's Address. Dr. GRASETT.
2. Pelvic Disease and Insanity. ERNEST HALL.

November, 1898.

3. Salpingo-Oöphorectomy for Uterine Fibroids. ALBERT A. MACDONALD.

2. HALL enters a plea for the judicious gynæcological treatment of the insane.

3. MACDONALD considers that salpingo-oöphorectomy, for the relief of fibroid tumours, has a limited field of usefulness, and it is by a careful selection of cases that the best results are obtained. The interstitial fibro-myomata of medium size, which produce hæmorrhage, but no other serious symptoms, are the ones which should be chosen for such treatment. The large soft tumours, fibro-cystic growth, submucous or subserous tumours with broad base, the telangiectic varieties, and others of like kind, should be dealt with in other ways, as serious degenerative changes are apt to follow castration. The best results are obtained by tying the tubes off close up to the uterus, so to cut off not only the blood supply through the ovarian arteries, but the nerve supply as well.

The Canada Lancet.

October, 1898.

1. Vicarious Urination (?) A. T. RICE.
2. Coin in Larynx—Tracheotomy—Recovery. D. J. GIBB WISHART.
3. Peach Stone in Œsophagus — Perforation — Death. D. J. GIBB WISHART.
4. The Treatment of Clubfoot. C. L. STARR.

November, 1898.

5. Notes on Female Risks. JAMES THORBURN.
6. Facilities for Clinical Study Offered to Qualified Medical Men by the London Schools of Medicine.

2. 3. WISHART relates the histories of two interesting cases. I. A man was holding a ten-cent piece between his teeth, when he suddenly drew it into his larynx. On examination the coin could be seen lying on the vocal cords and in the same plane, covering their

anterior half, and held in place by swollen ventricular bands above All attempts at removal being ineffectual, the trachea was opened through the two upper rings, and an incision was made in the cricoid cartilege. The coin was then removed and the patient made a good recovery.

II. An old woman swallowed a peach-stone, and complained of pain in the left side of the neck and inability to swallow. As attempts at the removal of the stone were unsuccessful, an incision was made parallel with the anterior border of the sterno-mastoid muscle. In separating between the carotid sheath and the tracheal coverings, a quantity of foul-smelling pus welled up, and a probe discovered the stone lying point downwards, in the same line, outside the trachea, and it was removed. She was fed by nutrient enemata, but gradually failed and died on the seventh day after the operation.

The Dominion Medical Monthly and Ontario Medical Journal

October, 1898.

1. Cases in Practice—Two Months' Work in Abdominal Surgery ERNEST HALL.
2. Continuous Irrigation in Puerperal Septicæmia. F. C. HAGAR.

November, 1898.

3. Clinical Reports. T. K. HOLMES.
4. Empyæma. Dr. BRODIE.
5. Fistula in Ano. J. W. SHAW.
6. Diet in Lithæmia. P. McG. BROWN.
7. My Experience with Diphtheria During the Fall of 1897. W. DOAN.
8. Method of Preparations for Abdominal Section in Royal Jubilee Hospital, at Victoria, B.C.
9. An Interesting Case in Practice. Dr. MERRITT.

The Maritime Medical News.

October. 1898.

1. Operative Treatment of Cancer of the Tongue. G. E. ARMSTRONG.
2. Tuberculosis and the Forecastle. J. E. MARCH.
3. Notes from Midwifery Practice. W. S. MUIR.
4. Some Leading Gynæcologists and their Work. A. L. SMITH.

November, 1898.

5. Rupture of Vagina during Parturition. J. W. DANIEL.
6. Some Interesting Skin Lesions in Practice. G. G. MELVIN.
4. Some Leading European Gynæcologists. A. L. SMITH.

1. ARMSTRONG says the operations for cancer of the tongue des-

cribed in English text-books fail to fulfil many important requirements, but the one that has given him the best results is the method devised by Kocher of Berne. There is a preliminary tracheotomy, the patient breathes through the tube during the operation and during convalescence, and so the danger of aspiration pneumonia is done away with. An incision is made from below the ear to the hyoid bone and then up to the symphysis of the lower jaw. All the glands are removed, including the submaxillary salivary gland. The facial artery is tied and the loss of blood is reduced to a minimum. He had found it an advantage to close the wound, leaving only sufficient space for the insertion of a large tube packed with gauze. The patient should be fed by large quantities of artificially digested milk and eggs through a tube passed into the stomach.

2. MARCH says that during the past year several ship-masters have stated that there has almost always been at least one case of consumption in their forecastles. In order to get an idea as to what part of all the time spent in the marine hospitals of Canada by sailors, was due to tuberculosis, he wrote to the Medical Superintendents of seventeen hospitals which were each credited by the Auditor General's Report for 1897 with a total of over two hundred days. Ten hospitals reported and the average was 24.50 per cent. or practically one quarter of all the time. The estimated cost to the Marine Department of the reported cases would be $10.000 for care alone. At the quarantine stations something should be done to improve this condition of affairs, considering the enormous cost of this disease directly and indirectly to the country. He strongly urges that tuberculosis should be scheduled as a quarantine disease; that the regulations should contemplate the return of tuberculous steerage passengers to their homes, by the transportation company bringing them; the removal of consumptive sailors and firemen from the forecastles in which they may be found; the renovation of the quarters which have been occupied by them, and the disinfection by steam at a high temperature of all clothing, bedding, etc., that have been exposed to the infection.

Canada Medical Record.

September, 1898.

1. Canadian Medical Association. J. M. BEAUSOLEIL.
2. The Pioneers of Medicine in the Province of Quebec. W. H. DRUMMOND.
3. The Treatment of Inebriates. A. M. ROSEBRUGH.

October, 1898.

4. Acute Infective Pyo-Nephrosis, complicating Pregnancy. H. L. Reddy.
5. Oxytuberculine in the Treatment of Pulmonary Tuberculosis. A. J. Richer.

L'Union Medicale du Canada.

Septembre 1898.

1. Cancer du col utérin compliquant la grossesse. Eugène St-Jacques (de Paris).
2. Quelques gynécologistes européens de renom. A. Lapthorn Smith.

Octobre 1898.

3. Péritonite septique généralisée consécutive à l'appendicite et son traitement chirurgical. D. Marsil.
2. (suite). Quelques gynécologistes européens de renom. A. Lapthorn Smith.

La Revue Medicale.

Septembre 28 ; *Octobre* 5.

1. Le médecin à la campagne, (causerie faite à la Université Laval, le 23 juin). J. D. Paradis.

Octobre 12.

2. De l'emploi du solanum carolinense dans le traitement de l'épilepsie et autres affections nerveuses-convulsives. E. de Laval-Thyernay.

Octobre 19.

3. Leçon d'ouverture du cours sur les maladies des voies urinaires, à la faculté de médecine de Paris. par M. le prof. Tuffier, reconstituée au moyen de quelques notes prises par le Dr. Henri Lasnier, de Lévis.

Octobre 26 ; *Novembre* 2.

4. L'antisepsie en ophtalmologie. Jéhin Prume.

Novembre 9.

5. Strepto-diphtérie. Eugène Paquet.

Novembre 16.

6. De la varicocèle, sa cure radicale par la ligature double et l'excision des veines combinées à la résection étendue du scrotum. M. T. Brennan.

Novembre 23.

7. Relation d'un cas de monstruosité fœtale. Absence complète du cordon· Insertion du placenta dans le périnée de l'enfant. Alphonse Lessard.

2. de Laval-Thyernay writes of the employment of Solanum Carolinense in the treatment of epilepsy, tetanus, eclampsia and other convulsive affections. He thinks that its use is chiefly indicated in the

epilepsies occurring in young girls, especially when associated with the commencement of the menses. On hysteria it has little effect, but he has obtained excellent results from its use in eclampsia.

4. JÉHIN PRUME describes the necessary details of the antiseptic technique that should be employed in all operations upon the eye.

6. BRENNAN considers that the operative treatment of varicocele should aim to produce a radical cure by not only excising the diseased veins, but by resecting a portion of the scrotum. He relates several cases in which the operation had marked effects in relieving such conditions as neurasthenia, hypochondriasis, spermatorrhœa, masturbation and epilepsy. Resection of the scrotum alone may be done where the varicocele is slight and of recent date, where the veins are flabby and can be emptied by pressure or the dorsal decubitus, where the scrotum is but little relaxed, or where the reflex phenomena are absent. The combined operation should be performed when the veins are rigid, the scrotum relaxed and where there are marked local reflex symptoms.

7. LESSARD describes a rare monstrosity. There was complete absence of the cord, the placenta was inserted upon the body of fœtus over the region of the vulva, anus, and upper part of the thigh. The vertebral column was bent so that the pelvis was attached to the shoulders. Both hips were dislocated.

Kenneth Cameron.

Reviews and Notices of Books.

Cleft Patate, Treatment of Simple Fracture by Operations Diseases of Joints, Antrectomy, Hernia, etc., etc. By W. Arbuthnot Lane, M.S. London: The Medical Publishing Co., Limited.

A very neatly gotten up little book containing a collection of clinical lectures which have been published from time to time.

To two of these lectures one turns with some curiosity. The first is a strong plea, well supported, in favour of the treatment of simple fracture by operation. The simple fractures especially referred to are oblique fractures of the bones of the leg.

If one could always be sure that no pathogenic germ would gain access, there is no doubt but that much better results could often be obtained in this way. But, unfortunately, the best trained surgeon, in a fully equipped operating room cannot yet be absolutely sure of his technique, much less the occasional surgeon, operating, often amidst the most unfavourable surroundings, assisted by totally untrained assistants. Let us hope that it will not be always so. Another point made by Mr. Lane will be assented to by a larger number of surgeons, and that is, that it is blood clot and inflammatory effusion, more than the contraction of muscles, that prevents the proper and accurate approximation of the fragments.

The second noticeable lecture is entitled "Some of the Consequences of Wearing Boots." It is illustrated, and should be read by all, medical and lay, who are prone to sacrifice comfort and common sense to fashion and appearance. G. E. A.

Transactions of the American Surgical Association. Volume the Sixteenth. Edited by De Forest Willard, A.M., M.D., Ph.D., Recorder of the Association. Philadelphia: William J. Dornan. 1898.

The present volume of the Association is considerably smaller than most of the preceding volumes, containing nine papers and two hundred and eighty odd pages less than the volume for 1897.

A very good portrait of the late Dr. Hayes Agnew forms an appropriate frontispiece. The late Dr. Agnew was President of the Association in 1887. During the past year a monument, lasting in character, has been erected in Philadelphia in the Agnew Memorial Wing of the University Hospital.

The Annual Meeting of the Association was, this year, held in New Orleans. In his address, the President, Theodore F. Prewitt, M.D., discussed "The Future of the Association," particularly regarding the widening of the portals of entrance. The president favors a less exclusive policy and would admit men who are honest, capable, and have won a standing in the profession, which would warrant admission to fellowship in the most distinguished body of surgeons in the United States. Among the valuable papers contributed at the annual meeting, and printed in the present volume, together with the discussion which followed, may be mentioned:

The Etiology and Classification of Cystitis, by N. Senn, M.D. The Question of Operative Interference in Recent Simple Fracture of the Patella, by Charles A. Powers, M.D. The Use of Animal Toxines in the Treatment of Inoperable Malignant Tumours, by Geo. Ryerson Fowler, M.D. An Enquiry into the Etiology of Cancer, with some reference to the late Investigations of the Italian Pathologist, by Roswell Park, M.D. A Case of Appendicitis in which the Appendix became permanently soldered to the Bladder like a Third Ureter, producing a Urinary Fecal Fistula, by W. W. Keen, M.D. Hypertrophy of the Prostate Gland and Suggestions in regard to its Treatment, by L. C. Lane, M.D.

These and several other papers are very full and very interesting, bringing the subjects treated of up to date.

The volume is neat, the paper good, the printing clear and easily read.

G. E. A.

Manual of Otology. By Gorham Bacon, A.B., M.D., with introductory chapter by Clarence John Blake, M.D., with 110 illustrations and a colored plate. Lea Brothers & Co., New York and Philadelphia. 1898.

After a perusal of this manual, one can only express approbation of it It is a concise, common-sense book—the salient points in the diseases of the ear, nose, and nasopharynx are clearly put, all unnecessary verbiage is abolished, and the reader is rewarded by a definite comprehensive view of the subject.

The tone of the book impresses one with the fact that it is the production of a man who knows what he is writing about and knows what is needed by his reader. It is impossible to pick out any one portion of the work especially as worthy of commendation, the great point in its favour being above all its conciseness and thoroughness. To the student and general practitioner it must be a useful and practical guide. J. W. S.

International Clinics. A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology and Dermatology, and specially prepared articles on Treatment and Drugs. Edited by Judson Daland, M.D., Philadelphia; J. Mitchell Bruce, M.D., London, Eng.; David W. Findlay, Aberdeen, Scotland. Volume III. Eighth Series. 1898. J. B. Lippincott Company, Philadelphia. Canadian Agent, Charles Roberts, Montreal.

The following well-known names are among the contributors to this volume: James M. Anders, Philadelphia; T. Lauder Brunton, London; Sir Dyce Duckworth; Professor J. Grancher, Paris; O. Heubner, Berlin; Ernest A. Sansom, London; Nestor Tirard, London; Friedrich Trendelenburg, Leipsic; Prof. von Bramann, Halle; Prof. Anton Wölfler, Prague; J. C. Webster, Montreal; Alexander McPhedran, Toronto, Paul F. Mundé, New York.

As in the previous two volumes of this series, such names bear with them their own testimony concerning the contents of this volume. The words of commendation, written in review of Volumes I. and II., apply equally to this. W. F. H.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, November 7th, 1898.

J. G. Adami, M.D., President, in the Chair.

Drs. F. M. Fry and H. R. Craig were elected ordinary members; and Drs. Rose, Cushing, Roy, Robertson, Keenan, Brown, Barclay and Smith, of the Royal Victoria Hospital; Drs. Gagnon, Deschambault, Laroche, Lesperance and Ethier, of the Notre Dame Hospital; and Dr. E. A. Gladman, of the Montreal Maternity, were elected temporary members.

Fibroma with Diseased Appendages.

Dr. Lapthorn Smith gave the report of a case of Fibroma of the Uterus, and exhibited the tumor which he had removed. (Will be published later.)

Notes on Cephalhæmatoma.

Dr. D. P. Anderson reported a case of separation of the outer and inner tables of the occipital bone in an infant aged 2 months and 14 days, by a blood clot.

The condition had not been noted until time of autopsy, so, unfortunately, no history of the case was obtained.

This tumour, which was situated on the occipital bone immediately below the lambdoid suture, was somewhat ovoid in shape, with its centre corresponding to that of the occipital protuberance. Its transverse diameter measured $5\frac{1}{2}$ cm., while its vertical diameter measured $4\frac{1}{2}$ cm. At its central points the two tables were separated about $\frac{1}{2}$ cm. from one another, the intervening cavity being filled up with partially organized blood clot.

No communication could be discovered with either the pericranium or dura. The inner table was apparently in normal position, but the outer was projecting from the surrounding bone. At the periphery both tables were moderately thickened, while small bony spicules were found throughout connecting the two tables.

As the pericranium was peeled off with ease, leaving a smooth surface, the inference was that this condition had been brought about by a separation of the tables.

The condition was undoubtedly a very rare one. Two somewhat

similar cases were reported on by Flint,[1] and a second by Busch, but both differ from the present case in that they communicated with the sinus by an opening in the bone. No communication whatever was present in this case.

Double Proptosis from Thrombosis of the Cavernous Sinuses.

Dr. F. G. FINLEY read the report of this case, and Dr. WYATT JOHNSTON demonstrated the pathological specimens. (See page 822 of the November Number.)

Dr. J. W. STIRLING mentioned the case of a child who came under his observation at the Foundling Hospital. In the course of scarlet fever an acute otitis media developed in the left ear, causing a free purulent discharge. A few days later intense swelling of the left eyelids, especially the upper, suddenly developed, and it was impossible to open the lids. This was followed one day later by a similar condition in the right eyelids. Two days later, again, the swelling began to disappear from the left lids and shortly after from the right. Three days after this the child died.

Dr. C. F. Martin had found at the post mortem examination thrombosis of the left superior petrosal sinus and also of the cavernous and circular sinuses. It was a parietal clot, adherent to the walls of the vessels. The clot did not entirely fill the vessel lumen, and was fairly well organized. It seemed as if it had been a temporary clot which afterwards softened, broke down, and was tunnelled through.

Dr. H. S. BIRKETT asked Dr. Johnston whether either frontal sinus had been involved, and, on receiving a reply in the negative, said he had asked the question because it was very unusual to have the condition described by Dr. Finley due to infection from the antrum of Highmore. Most of these cases had their origin from disease of one of the frontal sinuses.

Dr. F. BULLER thought that these cases of thrombosis of the cavernous sinuses were apt to occur from any focus of suppuration connected by venous channels with that sinus, consequently they were not so very rare as a sequence to carious processes in the petrous portion of the temporal bone. They were a frequent lesion in chronic suppurative otitis media, and, so far as he was aware, the occurrence of thrombosis of the cavernous sinus under these circumstances was always necessarily fatal. He had himself observed three such cases, in only one of which a post mortem could be obtained.

This case occurred in the person of a well-known teacher of Scotch dancing, whom he had attended for several years, off and on, for

[1] Extracted by Chelius from New English *Journal of Medicine*, vol. ix., 1820, p. 112.

chronic suppuration in the middle ear. On the occasion of his return from a trip to the Old Country, he arrived in an almost unconscious condition, with all the signs of this disease of the sinus, and never rallied, but died two or three days later. The post mortem showed extensive caries at the apex of the petrous portion of the temporal bone so close to the sinus that it may very well have been directly infected. There was, however, thrombosis of the superior petrosal and an extensive leptomeningitis which undoubtedly accounted for the fatal termination.

Dr. Buller did not think it at all likely that any operative interference could ever be successful in this variety of thrombosis when once established, but there was no reasonable doubt that the initial lesion, the original suppurative focus could often be removed if recognized in time, and this very fatal disease thus prevented.

Pneumothorax.

Dr. W. F. Hamilton read a paper on pneumothorax. (See page 885.)

MEDICO-PSYCHOLOGICAL SOCIETY OF QUEBEC.

Meeting held at the Protestant Hospital for the Insane, Verdun P.Q., October 15th, 1898.

Dr. VALLÉE, President in the chair.

Election of New Members.

Drs. Henry M. Hurd, Baltimore, U.S.: and Ritti, Charenton, France: A. R. Urquhart, Perth, Scotland; and Villers, Brussels, Belgium, were elected honorary members of the Society.

Medical Certificates and Commitment.

Dr. VILLENEUVE. At the last meeting of the Society, I called the attention of its members to the necessity of modifying the actual form of the medical certificate of commitment. Since then I have continued my studies and researches and have come to the conclusion, that in modifying the formula "B" of our certificate, in the sense of the certificate as required in England, and our formula "C," in the sense of the annex of the certificate in use in the State of New York, but, adapting them to the special wants of our Province we would be as near perfection as possible.

In France, the great majority of commitments, are made under the direction of the administrative authority. In England, in the State of New York, and in many other countries, the commitment is ordered by the courts of justice, of different jurisdictions, in the Province of Quebec, it is the medical superintendent of an asylum, who orders the commitment of the insane to the asylum under his charge, and for the district under his control. The insane detained in the gaols, are the only exceptions to this rule, as for the others, the law cannot interfere unless they are adjudged scandalous or dangerous lunatics. The number of the insane transferred from the prisons by order of the Lieutenant-Governor, and those adjudged scandalous or dangerous and committed on warrants by justices of the peace or police magistrates, do not reach the tenth part of those admitted, so that ninety per cent., at least, of the admissions are ordered by the medical superintendent.

The medical superintendent is then placed in the position of a judge, since he is called upon to exercise a function ordinarily devolving on the judges and to decide upon the liberty of individuals, but with this difference, that he decides, not after the examination of the indi-

vidual in question and after hearing the parties, but after the examination of the documents that are furnished him.

Undoubtedly, the most important of these papers, is the medical certificate. This certificate should then afford proof :—1st. That the individual is insane, and this cannot be better shown than by a a detailed statement of the symptoms of lunacy, directly observed by the doctor. 2nd. That there is necessity of placing the person in an asylum, either in view of treatment, or protection, or public safety. These different points, are proved by the form of mental alienation of which the medical certificate should give a sufficient idea, by the study of the circumstances in which the patient is found, and by the deeds and actions to which he is prone ; the depositions and names of the eye-witnesses are also indispensable. 3rd. That the physical state of the patient permits transferring him to an asylum, with the hope of favorable results from special treatment, and ground to believe that the patient might become dangerous or scandalous if at large.

As I have shown at our last reunion, these certificates are, in most cases, manifestly insufficient. Many of these certificates do not make any mention of symptoms of lunacy directly observed by the doctor, do not cite the facts observed by other persons in other than an imperfect manner, or exaggerate them, without giving the names of eye-witnesses, so that later on it is impossible to ascertain the exact facts, finally they do not sufficiently establish what is the physical condition of the sick person, so that very often those that are actually dying are brought to the asylum when nothing in the medical certificate would show that such was the case.

To prevent these inconveniences, the giving of a certificate ought to compel the doctor granting it, when he declares that the person is insane and should be incarcerated in an asylum, to state separately : 1st. The facts observed by himself at the time of examination. 2nd. The facts which were told him by others, giving at the same time the names and addresses of the persons. This certificate should also contain a precise declaration of the physical state of the patient.

The English certificate contains all these *desiderata*, and other differences of detail which it would be useful to incorporate in our certificate, as, for example, the precise date of the examination and the exact name of the place where it was held, with the postal address and the place of residence of the doctor giving the certificate.

The formula "C," similar to the annex of our medical certificate and containing as many as thirty-one questions, should be completely changed, because it no longer serves the purpose for which it was originally intended.

I propose, as a model for this change, the annex of the medical certificate of New York State, which in ten questions, clear and precise, embraces all the supplementary information that could be desired.

I am of opinion that the society should name a committee to study this question, so that at the next meeting they would be prepared to submit a form of the medical certificate to the members.

The society adopted the motion of Dr. Villeneuve and named a special committee composed of Messrs. Villeneuve and Anglin to study the question. They will draw up a new series of certificates necessary to the committal of lunatics and submit them to the Society at its next meeting.

The Influence of Traumatism on the Mental State.

Dr. CHAGNON. Incidental maladies and traumatism befalling lunatics during the course of their mental affections are sometimes of good omen to the alienist, inasmuch as they may help to a speedy cure, which otherwise might have come slowly or never.

I have had under observation in my service at St. Jean de Dieu Asylum, a case, which after two years duration terminated in a cure thanks to traumatism. I think it will be interesting to lay before you the facts of the case.

Hugh James K., aged 25 years, the son of a farmer was admitted to St. Jean de Dieu Asylum, Longue Pointe, on October 19th, 1896 There was no hereditary taint of insanity in the family, and he himself did not show any physical stigmata of degeneracy. He was a conductor on the Street Railway cars for several days, when a slight accident happening to the car in his charge was sufficient to upset his mental equilibrium. This occurred about 15 days before he came to the asylum.

On his admission, he showed a slight trace of maniacal excitement which shortly afterwards gave place to stupor during which it was sometimes necessary to have recourse to forced means of nutrition. This stupor did not, however, continue all the time, it was broken by more or less intense maniacal attacks. Some ambitious ideas showed themselves at times and hallucinations of hearing rendered him impulsive; he gradually fell into "gatisme."

On the morning of the 13th of June, 1898, making an attempt to commit suicide, he drove a knife into the epigastric region. The course of the wound was from right to left: the knife followed the rectus muscle for the space of about half an inch, and buried itself in the linea alba by a slight oblique opening measuring one inch.

Doctor Brennan was immediately called upon to perform a laparo-

tomy. He found no intestinal or gastric perforation, but a superficial layer of the omentum was cut off causing slight hæmorrhage of a small vein which was ligated with cat-gut and the abdomen closed. Whilst putting in the deep sutures, the patient showed signs of asphyxia with stoppage of the respiration and was in imminent danger of death. Rhythmic tractions of the tongue after Laborde's method, were practiced and the patient quickly recovered. The result of the operation was excellent; there was no rise of temperature and no suppuration, and the last sutures were removed on the fifteenth day. This attempt at suicide, which was the first, was due to the hallucinations of hearing: "They have bored me too long" he said to me, "and I prefer to die."

During the first week which followed the operation he fed himself very imperfectly, in spite of our entreaties, and wished to die. We saw that in a short time we would be obliged to have recourse to forced feeding, when all of a sudden he decided to take everything which was offered him. From this moment his convalescence progressed rapidly, and on the 31st of August, he was able to return to his family.

Two Cases of Psychical Troubles after Operation.

Dr. CHAGNON. I have had the advantage of observing two cases of psychical troubles after operation, one following an amputation of the breast, and the other amputation of a leg.

Sarcoma of the breast, operation, acute mania.—Madame D., was admitted to the Notre Dame Hospital, Montreal, on March 26th, 1891, for an operation for sarcoma of the breast, which was successfully performed on the morning of March 28th. She had little sleep the following night, slight agitation during the day of the 29th, absolute insomnia during the night of the 29th, and at length crisis of acute mania on the 30th. This state continued, and she became so agitated and so noisy that it was decided to send her to the asylum on urgency. She was admitted to St. Jean de Dieu on the 3rd of April, and died there on the 7th of April, from acute delirium. We learned from her husband that shortly after her marriage, which took place three years before, she had showed signs of maniacal excitement for a short time, and that one of her sisters was out of her mind. It was impossible to get any information about her family history.

Fungous arthritis of the tibio-tarsal articulation, amputation of the leg, cyclic insanity.—Mrs. F., was admitted to Notre Dame Hospital on June 5th, 1894, to be treated for a fungous arthritis of the tibio-tarsal articulation, of about five years standing.

Family History.—Her father died at 77 years of age from senile debility, her mother at the age of 68 years from the "grippe." She had seven brothers of whom four died young, the three living brothers are in good health. Three sisters are also in good health.

Personal history.—Mrs. F., had eleven children and one miscarriage. She never showed any nervous trouble. About 18 years ago she noticed that a tumour was growing on the dorsal surface of the foot. Inconvenienced by its growing volume, she had it removed six years later, but the wound did not heal until a piece of necrosed bone was removed. After six or seven years the disease reappeared and she was admitted to the hospital in an excessively debilitated condition It was pointed out to her that an operation was the only means of saving her life, and amputation of the leg was performed at the lower third. Secondary hæmorrhage was very abundant.

She left the hospital on the third of July in a very anæmic condition and, two or three months afterwards, began to show symptoms of melancholia. She saw everything in black; "as big as mountains," and was afraid of falling into poverty. This state of melancholia would begin towards evening continuing until the following evening, and was succeeded by a period of mental exaltation lasting the same length of time. The melancholico-maniacal fits, succeeded each other regularly from the time they first began and were followed by lucid intervals. Although not severe, they were yet perfectly distinct. Their beginning had been quite insidious.

In the first case reported there had been a former attack of insanity, collateral, and perhaps direct, heredity, inasmuch as the parents were unknown; and the effect of the traumatism was only to bring forth the intellectual troubles in a brain already prepared.

In the second the patient did not show any neuropathic history, hereditary or personal, and it is not possible to look upon any previous occupation, dread of operation, or the fear of death, as a determining factor. She knew that the operation alone could save her life, and she courageously decided to undergo it. The results of the operation were excellent and the recovery rapid. It must be concluded, therefore, that the operation alone was sufficient to cause the mental trouble.

Alcoholism and Responsibility The Social and Administrative Aspect of the Question.

Dr. G. VILLENEUVE read a report on the above named subject. (See page 928.)

Dr. VALLÉE. The communication that Dr. Villeneuve has just made us is very interesting, but I do not entirely agree with the conclusions of his report.

Dr. Villeneuve does not believe that L. T. is responsible for the attempt at suicide committed while he was drunk, but he is of opinion that he is responsible for his drunkenness. Now, from his family history, is it evident that he has inherited this tendency. Several cases of insanity can be found in his ancestors. Besides, he shows an excessive susceptibility to alcoholic influences. A small quantity of alcohol is sufficient to completely derange him. His intoxication is not like ordinary drunkenness; it is marked by so profound mental disturbance that he remembers none of the dangerous actions committed while in that state. The moment he begins to drink he is intoxicated, then he loses all consciousness, and on each occasion makes efforts to kill himself. When he is in his normal condition there is no inclination of this kind. He knows what he exposes himself too in getting drunk, nevertheless he begins again when an occasion presents itself. Does it not appear, as if he were really impelled by some irresistible impulse ?

It is very true, he claims that if he drinks, it is because he wishes to drink, and that he could abstain if he liked ; but I believe we must take this affirmation with some caution, for the degenerates of this class very often deceive themselves. Do we not often hear insane people, after their recovery give expression to similar pretentions ? In the case of hypnotised persons, do they not maintain, that they are free when they are not ?

At all events, Dr. Villeneuve regrets that we have not special establishments for the unfortunates of this class, such as exist in other countries. He would be ready to recommend the commitment of L. T. not to prison, nor to an ordinary lunatic asylum, but to a special institution. Now on what grounds would you convict him ? If he is responsible, he should be made to answer for his actions, and if found guilty, he should be sent to prison. On the other hand, since we propose sending him to a house of treatment, it is, because he is considered a sick man, susceptible of being cured or at least improved.

I am of this opinion. L. T. is an "alcoholique," he suffers from weakness of will, and in a great measure his responsibility is to be considered lessened by this weakness. It is often very difficult for the doctor to pronounce on the mental state of an individual who has committed an act whilst in a state of drunkenness. Here, the doctor is called upon, theoretically, for a decision, without seeing. He should take into consideration the individuality of the patient, the nature of the guilty act, and the circumstances leading to drunkenness. As to L. T., his family history shows that he inherited this tendency, and though quite intelligent in the ordinary affairs of life, the brutal

manner in which he gets drunk after taking a small quantity of alcohol, is evidence of an abnormal organic susceptibility. Drunkenness takes many forms, but in this case real folly seems to be the immediate result.

It was then decided, that at the next meeting, the question of alcoholism, and the establishment of special hospitals for its treatment would be in order.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXVII. DECEMBER, 1898. No. 12.

ALCOHOLISM AND RESPONSIBILITY.

The question of responsibility in cases of mental obliquity such as described by Dr. George Villeneuve, in the present issue,—cases that have been aptly styled "borderland,"—is admittedly a very difficult one.

The distinction between drunkenness and insanity has frequently been the subject of forensic investigation, but it is daily becoming more and more recognized by the profession, and to some extent by the laity, that inebriety in all its forms is a disease of the brain, resembling, if not in some cases constituting, true insanity. That an individual should in all other matters appear to be of sound mind, but that at certain times he should be subject to a morbid desire to reduce himself below the level of a beast by means of drink, is hard to grasp, but none the less true. Equally true is it that the continuous use of alcohol to excess produces a lowering of the moral tone, a dulling of the mental powers, and a weakening of the will which constitute an organized, progressive degeneration, and should, in justice, lessen, if not annul, the responsibility of its unfortunate victims.

Of the non-responsibility of Dr. Villeneuve's case during the stage of alcoholic delirium there can be no question, as he himself states. Whether equally irresponsible during the intervals, in other words, whether able to resist the impulse to use stimulants, is the point at issue. Here also, unlike the doctor, we would incline to the view of non-responsibility, the history tending strongly to stamp the patient, in our opinion, as a "degenerate," and so less able than the normal individual to resist the temptation to drink. The strong inherited predisposition on the paternal side to both alcoholism and insanity; the hypersusceptibility to the effects of the alcoholic poison; the asymmetry of the head and face; his youthful character as described

by his class-mates ; and his epileptic seizures, all testify to this conclusion.

While, perhaps, not insane in the ordinary acceptation of the term, and hence not fitted for ordinary asylum care, it is none the less sure that L. T. should not be at large, and it is to be regretted that the province does not possess an institution specially designed for such cases, wherein they could be detained on indeterminate sentences.

As clearly defining the status of drunkards and the means best adapted for their care, we quote the following from the report of a Select Committee of the British House of Commons, appointed in 1870, Dr. Dalrymple chairman, to enquire into the medico-legal relations of habitual drunkenness.

" That occasional drunkenness may, and very frequently does, become confirmed and habitual, and soon passes into the condition of a disease uncontrolled by the individual, unless indeed some extraneous influence, either punitive or curative, is brought into play.

" That self-control is suspended or annihilated, moral obligations are disregarded, the decencies of private and the duties of public life are alike set at naught, and individuals obey only an overwhelming craving for stimulant to which everything is sacrificed.

" That the absence of all power to check the downward course of a drunkard, and the urgent necessity of providing it, has been dwelt upon by nearly every witness ; and the legal control of an habitual inebriate, either in a reformatory or in a private dwelling, is recommended, in the belief that many cases of death resulting from intoxication, including suicides and homicides, may be thus prevented."

MUNIFICENT GIFTS TO THE MEDICAL FACULTY OF McGILL UNIVERSITY.

At the Annual Dinner of the Undergraduates of the Medical Faculty of McGill University, held at the Windsor Hotel on the 15th instant, the Chancellor, Lord Strathcona and Mount Royal, in replying to the toast of " Old McGill," intimated that he had been instructed by Lady Strathcona to make known her wish to donate the sum of $50,000 to the funds of the Medical Faculty.

It is scarcely necessary to say that this announcement was received with the greatest delight by every one present. When the Chancellor was enabled to proceed, he further intimated that his daughter, the Hon. Mrs. Bliss Howard, had also directed him to make known her wish to contribute likewise the sum of $50,000 to enable the Medical Faculty to continue and extend the sphere of its usefulness.

The Medical Faculty of McGlll owes much to her respected Chancellor. He was the first to materially recognize the efforts made by the Faculty to give a good course of instruction, and this recognition took the shape of a donation of $50,000. A few years afterwards he endowed the chairs of Pathology and Hygiene, contributing to this purpose the large sum of $100,000. Altogether the Medical Faculty have received from Lord Strathcona and his family the sum of $250,000.

It is pleasant to think that Lady Strathcona and the Hon. Mrs. Howard take almost as deep and affectionate an interest in the Faculty as does Lord Strathcona himself.

The gifts referred to were suitably acknowledged by Principal Peterson and Dr. Craik.

The announcement came as a complete surprise to everyone present, and for several minutes the voice of the speaker could not be heard owing to the enthusiasm evoked by a realization of the nature and proportions of the gifts.

The Medical Faculty will be now more than ever in a position to do their part to keep the torch of progressive medicine burning ; thanks to the noble generosity of Strathcona and his family.

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